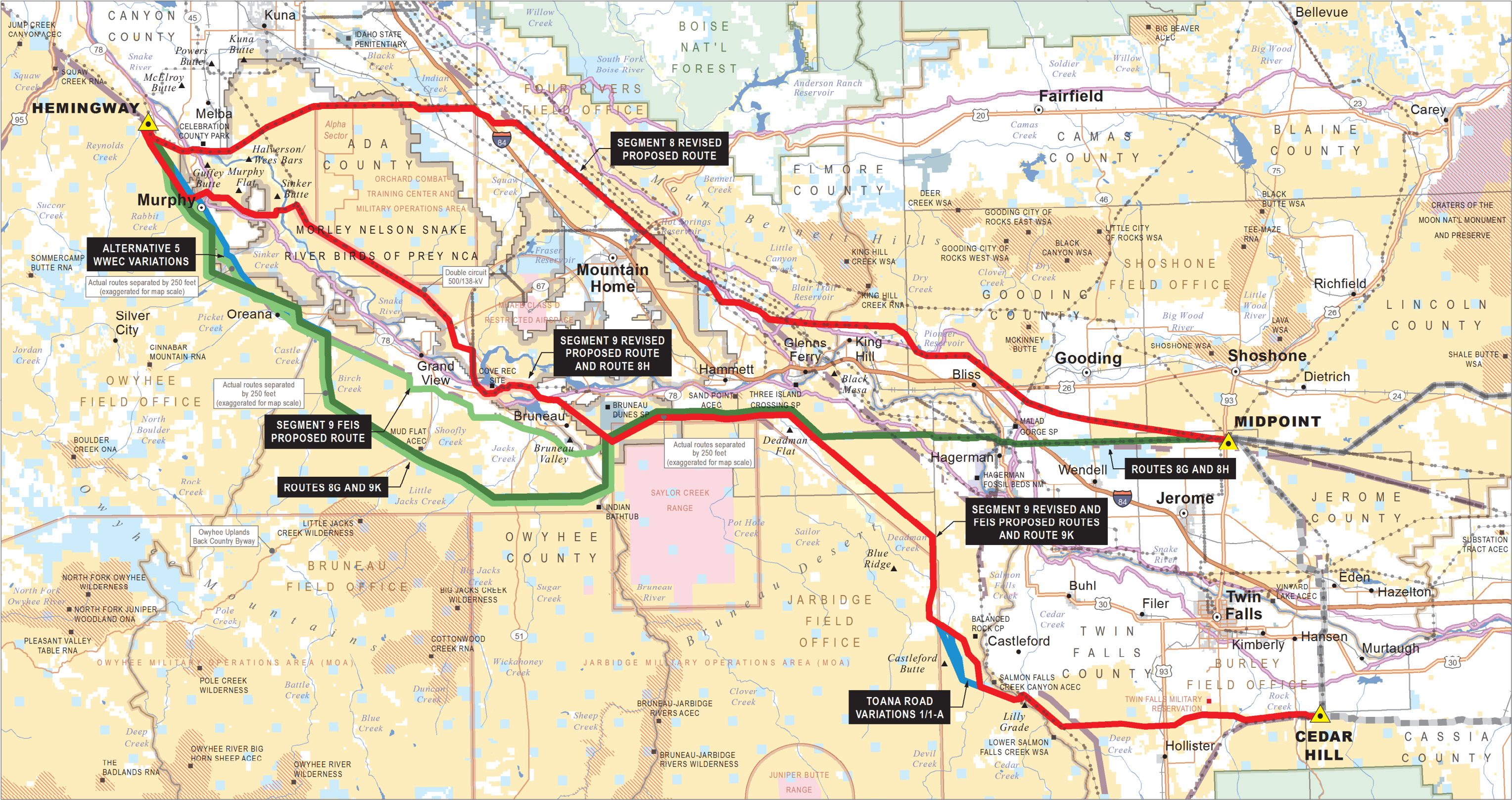


**Appendix A**  
**Gateway West Transmission Line Project Maps**

List of Figures

Figure A-1	Project Overview: Revised Proposed Route and Other Routes
Figure A-2	Alternative 1: Segments 8 and 9 Revised Proposed Routes
Figure A-3	Alternative 2: Segment 8 Revised Proposed Route and Segment 9 FEIS Proposed Route
Figure A-4	Alternative 3: Segment 8 Revised Proposed Route and Route 9K
Figure A-5	Alternative 4: Route 8G and Segment 9 FEIS Proposed Route
Figure A-6	Alternative 5 – Preferred Alternative: Routes 8G and 9K
Figure A-7	Alternative 6: Route 8H and Segment 9 FEIS Proposed Route
Figure A-8	Alternative 7: Routes 8H and 9K





NAD 1983 UTM Zone 11N

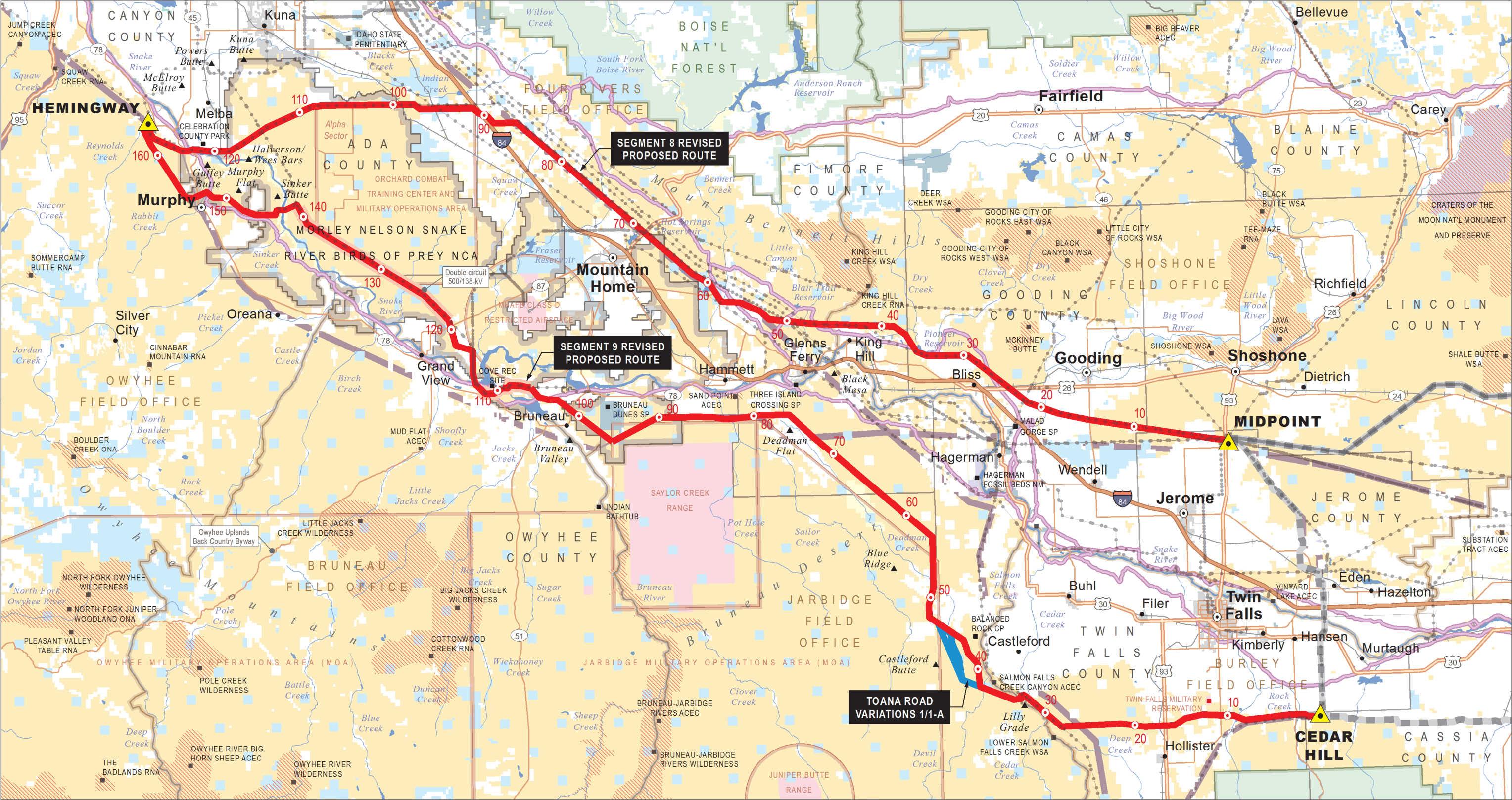
**Map Area**

<p><b>Project Features</b></p> <ul style="list-style-type: none"><li>Revised Proposed Routes</li><li>Segments 8 and 9</li><li>Revised Proposed Routes</li><li>Segment 9 Revised Proposed Route (DC 500/138-kV)</li></ul>	<p><b>Other Routes</b></p> <ul style="list-style-type: none"><li>Segment 8</li><li>Segment 9</li><li>Route Variations</li><li>Routes Approved in 2013 ROD</li><li>Substation</li></ul>	<p><b>Other Features</b></p> <ul style="list-style-type: none"><li>Transmission Line (138-kV or greater)</li><li>Nat'l Historic and Study Trails</li><li>BLM Field Office</li><li>City Limits/Urban Area</li></ul>	<p><b>County</b></p> <ul style="list-style-type: none"><li>Military Operating Area</li><li>Morley Nelson Snake River Birds of Prey NCA</li><li>National Forest</li></ul>	<p><b>Restricted Access Areas (ACEC, Wilderness, WSA, etc.)</b></p> <ul style="list-style-type: none"><li>West Wide Energy Corridor (WVEC)</li></ul> <p><b>Land Status</b></p> <ul style="list-style-type: none"><li>Bureau of Land Management</li></ul>	<p><b>Bureau of Reclamation</b></p> <ul style="list-style-type: none"><li>Fish and Wildlife Service</li><li>Forest Service</li><li>Military, Corps of Engineers, or Dept of Energy</li></ul>	<p><b>National Park Service</b></p> <ul style="list-style-type: none"><li>Private</li><li>State</li><li>State Wildlife, Parks and Recreation, or Other</li></ul>
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Gateway West Transmission Line Project  
Final Supplemental EIS

**Project Overview**  
Revised Proposed and Other Routes  
Figure A-1





NAD 1983 UTM Zone 11N

**Map Area**

**Project Features**

**Routes**

- Segments 8 and 9 Revised Proposed Routes
- Segment 9 Revised Proposed Route (DC 500/138-kV)
- Route Variations

**Other Features**

- Transmission Line (138-kV or greater)

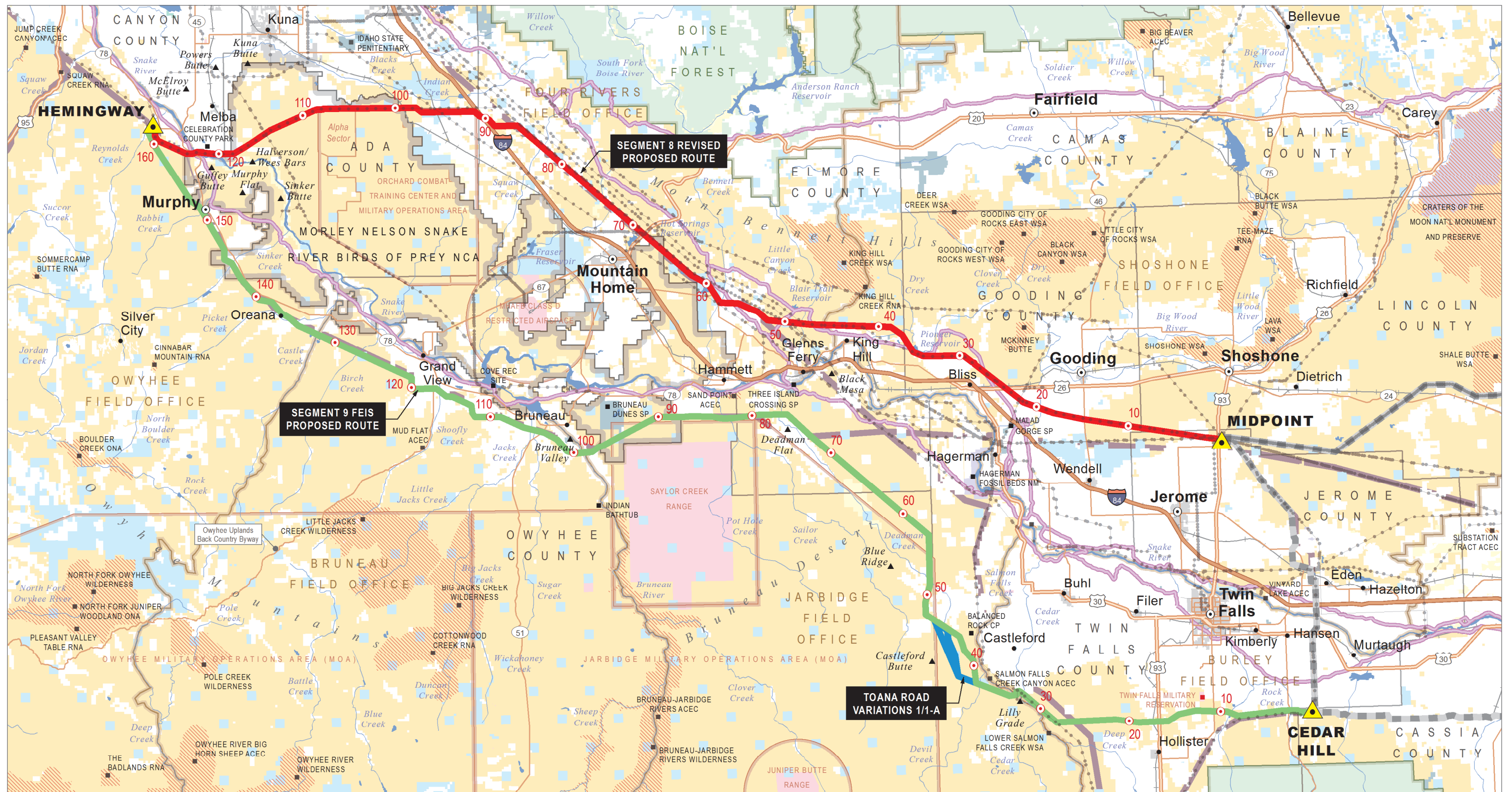
**Legend**

- Routes Approved in 2013 ROD
- Substation
- 10-mile Marker
- Nat'l Historic and Study Trails
- BLM Field Office
- City Limits/Urban Area
- County
- Military Operating Area
- Morley Nelson Snake River Birds of Prey NCA
- National Forest
- Restricted Access (WSA, ACEC, etc.)
- West Wide Energy Corridor (WWEC)
- Land Status
- Bureau of Land Management
- Bureau of Reclamation
- Fish and Wildlife Service
- Forest Service
- Military, Corps of Engineers, or Dept of Energy
- National Park Service
- Private
- State
- State Wildlife, Parks and Recreation, or Other

Gateway West  
Transmission Line Project  
Final Supplemental EIS

**Alternative 1**  
Segments 8 and 9 Revised Proposed Routes  
Figure A-2






 Gateway West  
 Transmission Line Project  
 Final Supplemental EIS  
**Alternative 2**  
 Segment 8 Revised Proposed Route and  
 Segment 9 FEIS Proposed Route  
 Figure A-3





NAD 1983 UTM Zone 11N

**Project Features**

**Routes**

- Segment 8 Revised Proposed Route
- Route 9K
- Route Variations
- Routes Approved in 2013 ROD

Substation

10-mile Marker

**Other Features**

- Transmission Line (138-kV or greater)
- Nat'l Historic and Study Trails

BLM Field Office

City Limits/Urban Area

County

Military Operating Area

Morley Nelson Snake River Birds of Prey NCA

National Forest

Restricted Access (WSA, ACEC, etc.)

West Wide Energy Corridor (WWEC)

**Land Status**

- Bureau of Land Management
- Bureau of Reclamation

Fish and Wildlife Service

Forest Service

Military, Corps of Engineers, or Dept of Energy

National Park Service

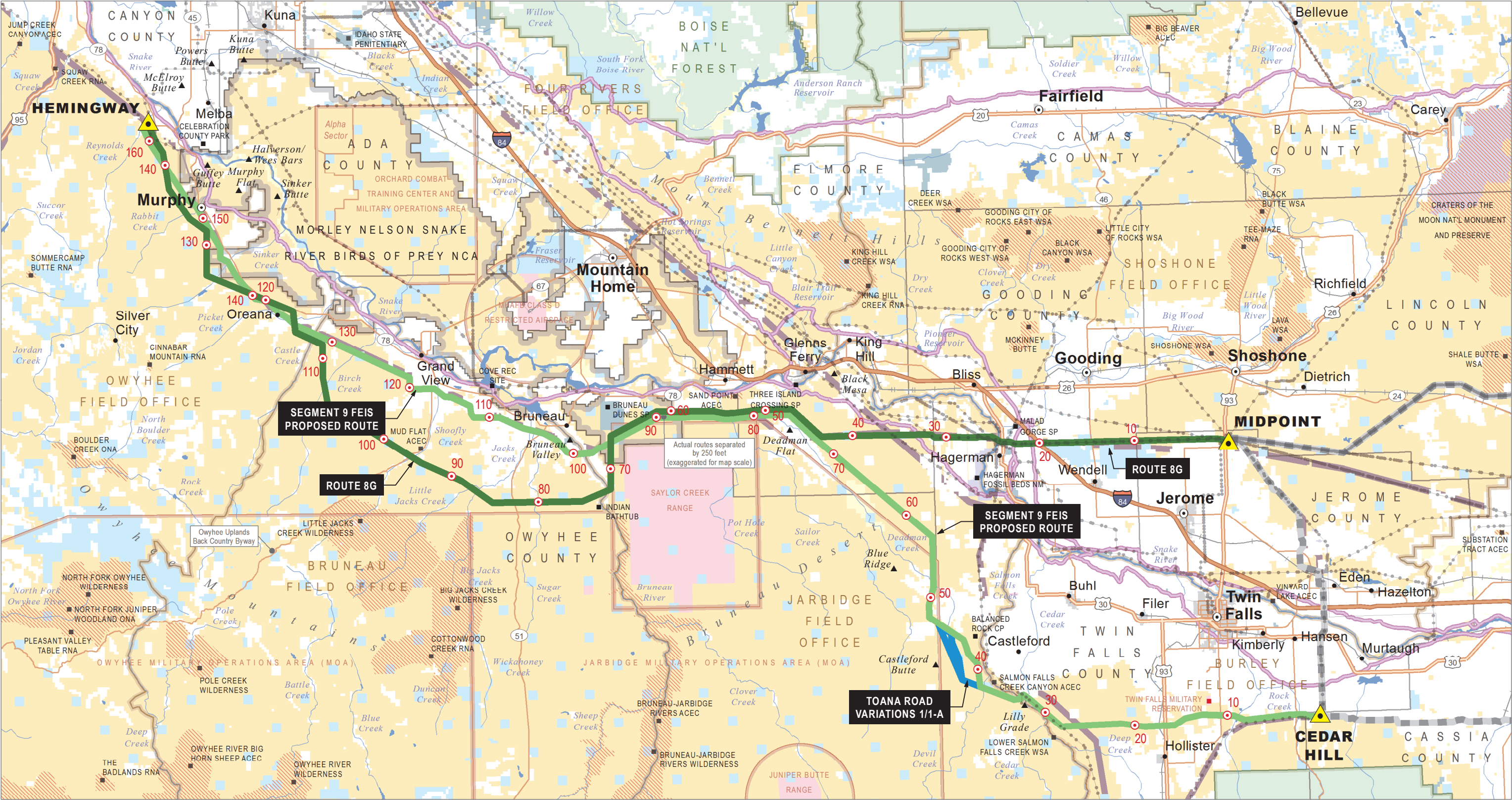
Private

State

State Wildlife, Parks and Recreation, or Other

Gateway West  
Transmission Line Project  
Final Supplemental EIS  
**Alternative 3**  
Segment 8 Revised  
Proposed Route and Route 9K  
Figure A-4





NAD 1983 UTM Zone 11N

**Project Features**

Routes

- Route 8G
- Segment 9 FEIS Proposed Route
- Route Variations
- Routes Approved in 2013 ROD

Substation

10-mile Marker

**Other Features**

- Transmission Line (138-kV or greater)
- Nat'l Historic and Study Trails

BLM Field Office

City Limits/Urban Area

County

Military Operating Area

Morley Nelson Snake River Birds of Prey NCA

National Forest

Restricted Access (WSA, ACEC, etc.)

West Wide Energy Corridor (WVEC)

**Land Status**

- Bureau of Land Management

Bureau of Reclamation

Fish and Wildlife Service

Forest Service

Military, Corps of Engineers, or Dept of Energy

National Park Service

Private

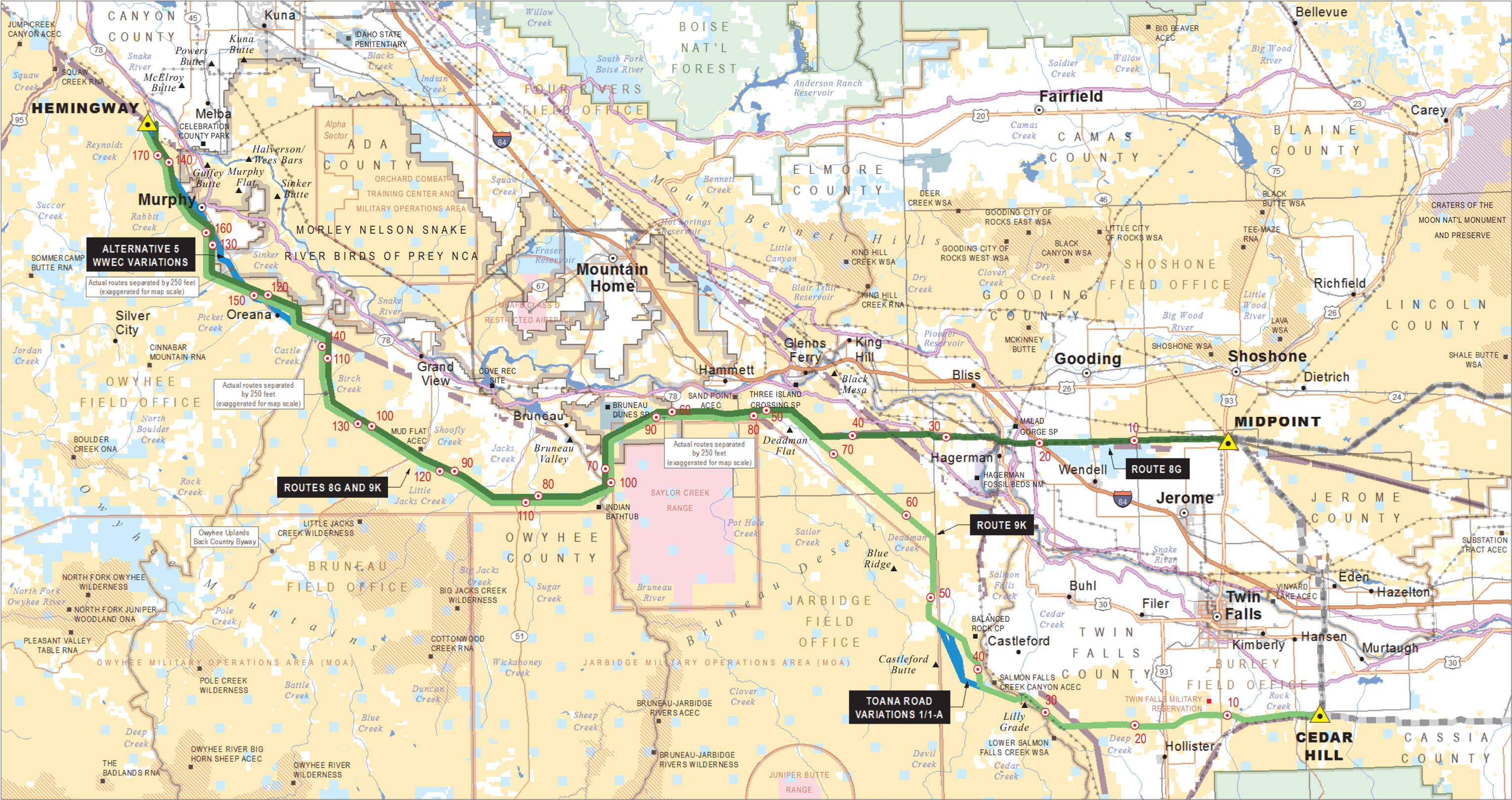
State

State Wildlife, Parks and Recreation, or Other

Gateway West  
Transmission Line Project  
Final Supplemental EIS

**Alternative 4**  
Route 8G and Segment 9  
FEIS Proposed Route  
Figure A-5





NAD 1983 UTM Zone 11N

**Project Features**

**Routes**

- Route 8G
- Route 9K
- Route Variations
- Routes Approved in 2013 ROD

Substation

10-mile Marker

**Other Features**

- Transmission Line (138-kV or greater)
- Nat'l Historic and Study Trails

BLM Field Office

City Limits/Urban Area

County

Military Operating Area

Morley Nelson Snake River Birds of Prey NCA

National Forest

Restricted Access (WSA, ACEC, etc.)

West Wide Energy Corridor (WVEC)

**Land Status**

- Bureau of Land Management
- Bureau of Reclamation

Fish and Wildlife Service

Forest Service

Military, Corps of Engineers, or Dept of Energy

National Park Service

Private

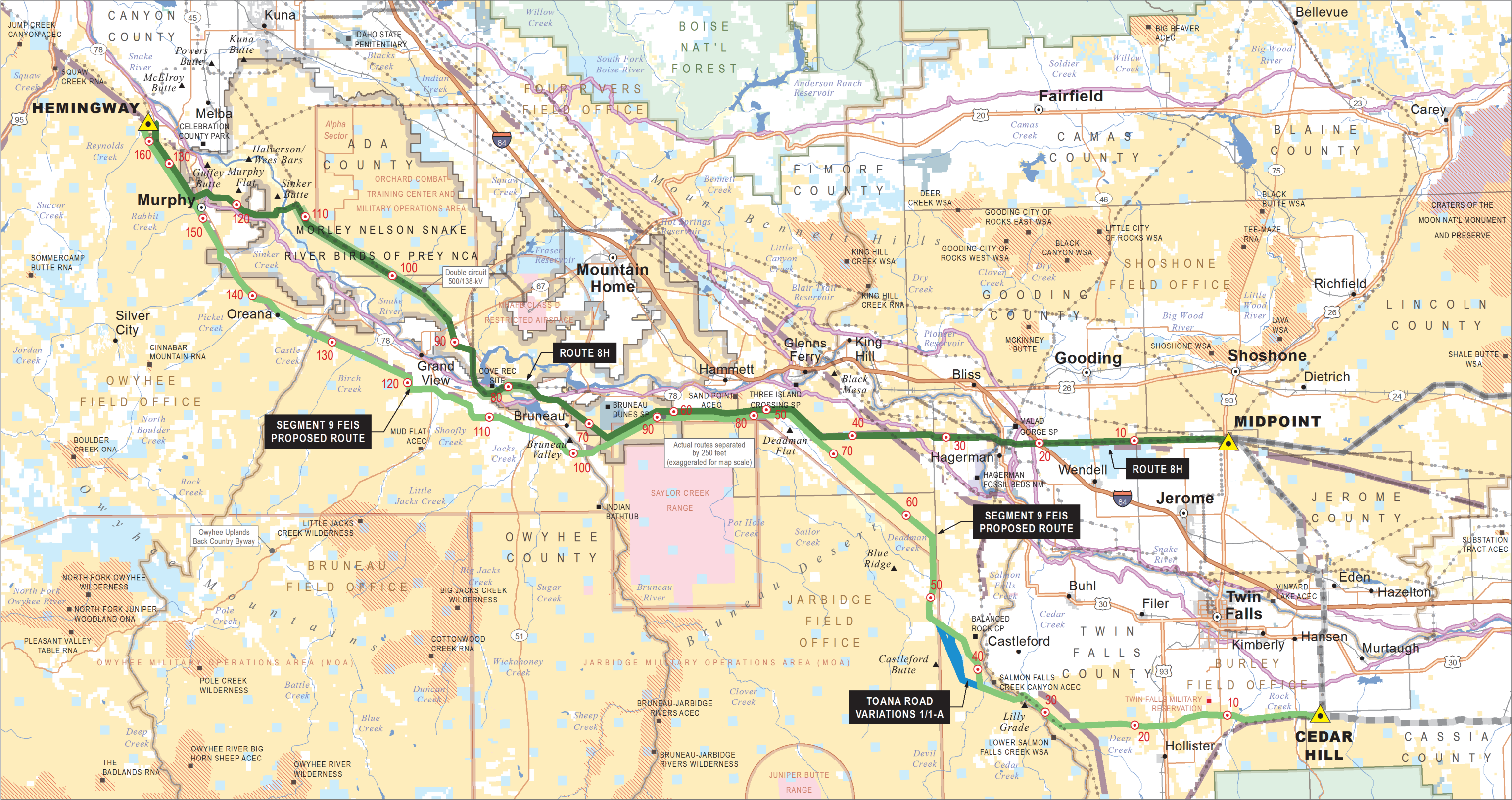
State

State Wildlife, Parks and Recreation, or Other

Gateway West  
Transmission Line Project  
Final Supplemental EIS

**Alternative 5 - Preferred Alternative**  
Routes 8G and 9K  
Figure A-6





**Project Features**

Routes

- Route 8H
- Route 8H (DC 500/138-kV)
- Segment 9 FEIS Proposed Route
- Route Variations

Routes Approved in 2013 ROD

Substation

10-mile Marker

**Other Features**

- Transmission Line (138-kV or greater)

Nat'l Historic and Study Trails

BLM Field Office

City Limits/Urban Area

County

Military Operating Area

Morley Nelson Snake River Birds of Prey NCA

National Forest

Restricted Access (WSA, ACEC, etc.)

West Wide Energy Corridor (WWEC)

**Land Status**

- Bureau of Land Management
- Bureau of Reclamation
- Fish and Wildlife Service
- Forest Service

Military, Corps of Engineers, or Dept of Energy

National Park Service

Private

State

State Wildlife, Parks and Recreation, or Other

Gateway West Transmission Line Project  
Final Supplemental EIS  
**Alternative 6**  
Route 8H and Segment 9  
FEIS Proposed Route  
Figure A-7

Sources | BLM, Esri, Idaho Power, NPS, USFS, USGS, Ventyx

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**Appendix B**  
**Proponents' Plan of Development Supplement  
and Helicopter-Assisted Construction Assessment**

**Appendix B-1**  
**Proponents' Plan of Development Supplement**

# **Plan of Development Supplement**

## **Gateway West Transmission Line Project**

### **Segments 8 and 9**

*Prepared by:*



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*and*



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Boise, ID 83702

August 2014

**TABLE OF CONTENTS**

<b>1.0 INTRODUCTION.....</b>	<b>1</b>
1.1 Background.....	1
1.2 Purpose of this Plan of Development Supplement .....	2
1.3 Applicability of the Plan of Development.....	2
<b>2.0 ROUTE CHANGES.....</b>	<b>2</b>
2.1 Segment 8.....	3
2.2 Segment 9.....	5
2.3 Lower Voltage Transmission Line and Substation Removal.....	7
<b>3.0 DESIGN CHANGES .....</b>	<b>11</b>
3.1 Segment 8 Line Separation .....	11
3.2 Segment 9 Double-Circuit Segment .....	12
<b>4.0 CONSTRUCTION AND OPERATION .....</b>	<b>16</b>
4.1 Construction.....	16
4.1.1 Access for Removal of Lines .....	16
4.1.2 Site Preparation.....	16
4.1.3 Remove Conductors.....	16
4.1.4 Remove Transmission Structures .....	17
4.1.5 ROW Site Reclamation .....	17
4.1.6 Gage Substation Removal .....	17
4.2 Operation .....	17
<b>5.0 DECOMMISSIONING .....</b>	<b>17</b>
<b>6.0 MITIGATION AND ENHANCEMENT PORTFOLIO .....</b>	<b>18</b>
<b>7.0 LITERATURE CITED.....</b>	<b>18</b>

## LIST OF TABLES

<b>Table 2-1.</b>	Segments 8 and 9 Proposed Route Features .....	3
<b>Table 3-1.</b>	Summary of Segment 9 Project Transmission Facilities .....	13

## LIST OF FIGURES

<b>Figure 2-1.</b>	Summer Lake Option 1 .....	4
<b>Figure 2-2.</b>	Baja Road-Murphy Flat South .....	6
<b>Figure 2-3.</b>	Swan Falls to Bowmont Transmission Line Modifications .....	9
<b>Figure 2-4.</b>	Mountain Home to Bennet Transmission Line Modifications .....	10
<b>Figure 3-1.</b>	Proposed Reduced Line Separation ROW Design Locations .....	12
<b>Figure 3-2.</b>	Typical Double-Circuit 500/138-kV Structure.....	14
<b>Figure 3-3.</b>	Double-Circuit 500/138-kV ROW Design.....	15

## APPENDICES

Appendix A	Location Maps
Appendix B	Morley Nelson Snake River Birds of Prey National Conservation Area DRAFT Mitigation and Enhancement Portfolio Proposal

## **ACRONYMS AND ABBREVIATIONS**

BLM	U.S. Department of the Interior, Bureau of Land Management
BOPNCA	Morley Nelson Snake River Birds of Prey National Conservation Area
Companies	PacifiCorp, dba Rocky Mountain Power, and Idaho Power Company (Idaho Power)
EIS	Environmental Impact Statement
Gateway West	Gateway West Transmission Line Project
Idaho Power	Idaho Power Company
kV	kilovolt
MEP	Mitigation and Enhancement Portfolio (Appendix B)
MP	milepost
NLCS	National Landscape Conservation System
OCTC	Orchard Combat Training Center
POD	Plan of Development
Project	Gateway West Transmission Line Project
RAC	Resource Advisory Committee
ROD	Record of Decision
ROW	right-of-way
SR	State Route
WECC	Western Electricity Coordinating Council

## 1.0 INTRODUCTION

### 1.1 Background

PacifiCorp, doing business as Rocky Mountain Power, and Idaho Power Company (Companies) are proposing to construct and operate the Gateway West Transmission Line Project (Gateway West or Project) consisting of approximately 1,000 miles of new 230-kilovolt (kV), 345-kV, and 500-kV alternating current electric transmission system consisting of 10 segments between the Windstar Substation at Glenrock, Wyoming, and the Hemingway Substation approximately 30 miles southwest of Boise, Idaho. The proposed transmission line is needed to supplement existing transmission lines in order to relieve operating limitations, increase capacity, and improve reliability in the existing electric transmission grid, allowing for the delivery of up to 1,500 megawatts of additional energy for the Companies' larger service areas and to other interconnected systems.

The U.S. Department of the Interior, Bureau of Land Management (BLM) released the final environmental impact statement (Final EIS) on April 26, 2013, that identified alternative routes for Segments 8 and 9 in and near the Morley Nelson Snake River Birds of Prey National Conservation Area (BOPNCA) in southwestern Idaho (BLM 2013a). The BOPNCA was designated by Congress in 1993 and became part of the National Landscape Conservation System (NLCS) in 2000, which was formally established by Public Law 111-11 in 2009. The BLM-preferred alternatives for Segments 8 and 9 avoided the BOPNCA, based on guidelines in manuals developed in 2012 pursuant to Public Law 111-11. However, the BLM-preferred routes had potential impacts on the greater sage-grouse (*Centrocercus urophasianus*), scenic resources in Owyhee County, local communities, and private landowners.

The Record of Decision (ROD), issued by the BLM in November 2013, deferred the decision to grant rights-of-way (ROW) on federal lands for Segments 8 and 9 because the principal siting issue involves a requirement in the enabling legislation (Public Law 103-64) that the BOPNCA be managed "to provide for the conservation, protection and enhancement of raptor populations and habitats and the natural and environmental resources and values associated therewith, and of the scientific, cultural, and educational resources and values of the public lands in the conservation area" (BLM 2013b).

The intent of deferring the decision was to provide "additional time for federal, state, and local permitting agencies to pursue a consensus regarding siting routes in these segments" (BLM 2013b). In addition, the ROD stated that "the BLM needs more time to evaluate and refine" the Draft Mitigation and Enhancement Portfolio Proposal (MEP) prepared by the Companies "to ensure that it is sufficient" to meet the enhancement requirement of the enabling legislation.

In November 2013, BLM established the Boise District Resource Advisory Council (RAC) Subcommittee to examine options for resolving siting issues associated with Segments 8 and 9 of the Project and evaluate the MEP submitted by the Companies. In May 2014, the RAC Subcommittee issued its recommendations in two reports: the first report addressed routing options in or near the BOPNCA (Boise RAC Subcommittee 2014a) and the second concerned the revised MEP submitted by the Companies to the RAC Subcommittee in March 2014 (Boise RAC Subcommittee 2014b). The RAC Subcommittee recommendations were adopted by the Boise District RAC and forwarded on to BLM for action.

In response to the reports of the RAC Subcommittee, the Companies have agreed to adopt the route option recommendations. The Companies have also incorporated some of the RAC Subcommittee MEP recommendations for mitigation and enhancement into the Morley Nelson

Snake River Birds of Prey National Conservation Area DRAFT Mitigation and Enhancement Portfolio Proposal (August 2014 MEP) included as Appendix B.

## **1.2 Purpose of this Plan of Development Supplement**

The purpose of this Plan of Development (POD) Supplement is to update the Companies' ongoing cooperative work with the BLM and the Boise RAC to reach agreement on routes for Segments 8 and 9. The Companies have been working cooperatively for 8 years with the BLM, cooperating agencies, and landowners to design the entire Project. The Companies have considered comments and have revised routing, standard operating procedures, and environmental protection measures including compensatory mitigation, such that the BLM can authorize the Project where it crosses public lands. This work has resulted in a ROD from the BLM for Segments 1 through 7 and Segment 10.

In order to show the adoption of the RAC-recommended routes and the MEP for Segments 8 and 9, the Companies now provide a revised SF-299 and POD. These documents present as the Proposed Action the revised routes recommended by the Boise RAC, provide details on reduced separation and on double-circuiting, and submit the August 2014 MEP that demonstrates that the Project as proposed will meet the requirements of the enabling legislation of the BOPNCA. If authorized to construct and operate the Project through BLM issuance of a ROW grant, the Companies will incorporate the changes described herein.

## **1.3 Applicability of the Plan of Development**

The August 2013 POD (IPC and RMP, 2013a), issued to support the November 2013 Project ROD, outlines the stipulations and mitigation measures identified in the Final EIS that must be followed during construction, operation, and maintenance of the Project. The August 2013 POD is intended to be used Project-wide as 1) a summary of Project environmental requirements and protection measures, and 2) a description of the processes and procedures that will be used to ensure compliance (including the requirements of the U.S. Fish and Wildlife Service, BLM, Bureau of Reclamation, United States Forest Service, and other federal, state, and/or local agencies) as appropriate. This supplement provides additional details to support a ROD for Segments 8 and 9 and incorporates by reference relevant details found in the August 2013 POD and in the January 2013 POD (IPC and RMP, 2013b) issued to support the Final EIS.

The Companies intend to issue one or more PODs for portions of the Project as those portions go to construction. Those construction PODs will contain site-specific details showing the applicability of the environmental requirements and protection measures, and will be an enforceable stipulation of the Notices to Proceed issued for each portion of the Project as it goes to construction.

## **2.0 ROUTE CHANGES**

The routes analyzed in the Final EIS showed the Companies' Proposed Routes for Segment 8 and 9 current at that time. The Proposed Route for Segment 8 diverged from the BLM's Preferred Route as indicated in the Final EIS at node 8e, trending due west across the BOPNCA, then avoiding several sensitive areas and terminating at the Hemingway Substation. The Proposed Route for Segment 9 largely avoided the BOPNCA and followed the West-wide Energy Corridor to the southwest of the towns of Bruneau and Grand View, trending northwest to terminate at the Hemingway Substation.

Since the issuance of the November 2013 ROD, which excluded Segments 8 and 9 from the decision, the Companies have continued discussions with the BLM and the Boise RAC, and



altered their Proposed Action for Segments 8 and 9 accordingly. In March 2014, the Companies submitted a revised MEP informally to the BLM and to the Boise RAC that altered the Companies' Segment 8 Proposed Route by substituting Alternatives 8D and 8E and the Companies' Segment 9 Proposed by substituting Alternative 9G.

The Proposed Routes for Segments 8 and 9, further revised based on the Boise RAC's recommendations, are detailed below. For each of these Segments, the first approximately 90 miles remains unchanged. Those first 90 miles were shown in the Final EIS as representing both the Companies' Proposed Route and the BLM's Preferred Route. Since there is no controversy over these portions of the routes, the Companies are proposing no changes to them. Similarly, the Boise RAC examined only the portions of each Segment where impacts to the BOPNCA were substantial and subject to additional discussion and revision. For the purposes of this POD, revisions to Segment 8 begin at the node identified as 8e in the Final EIS and as node 8-01 in Figure 2-1, while revisions to Segment 9 begin at Node 9g, identified as node 9-01 in Figure 2-2.

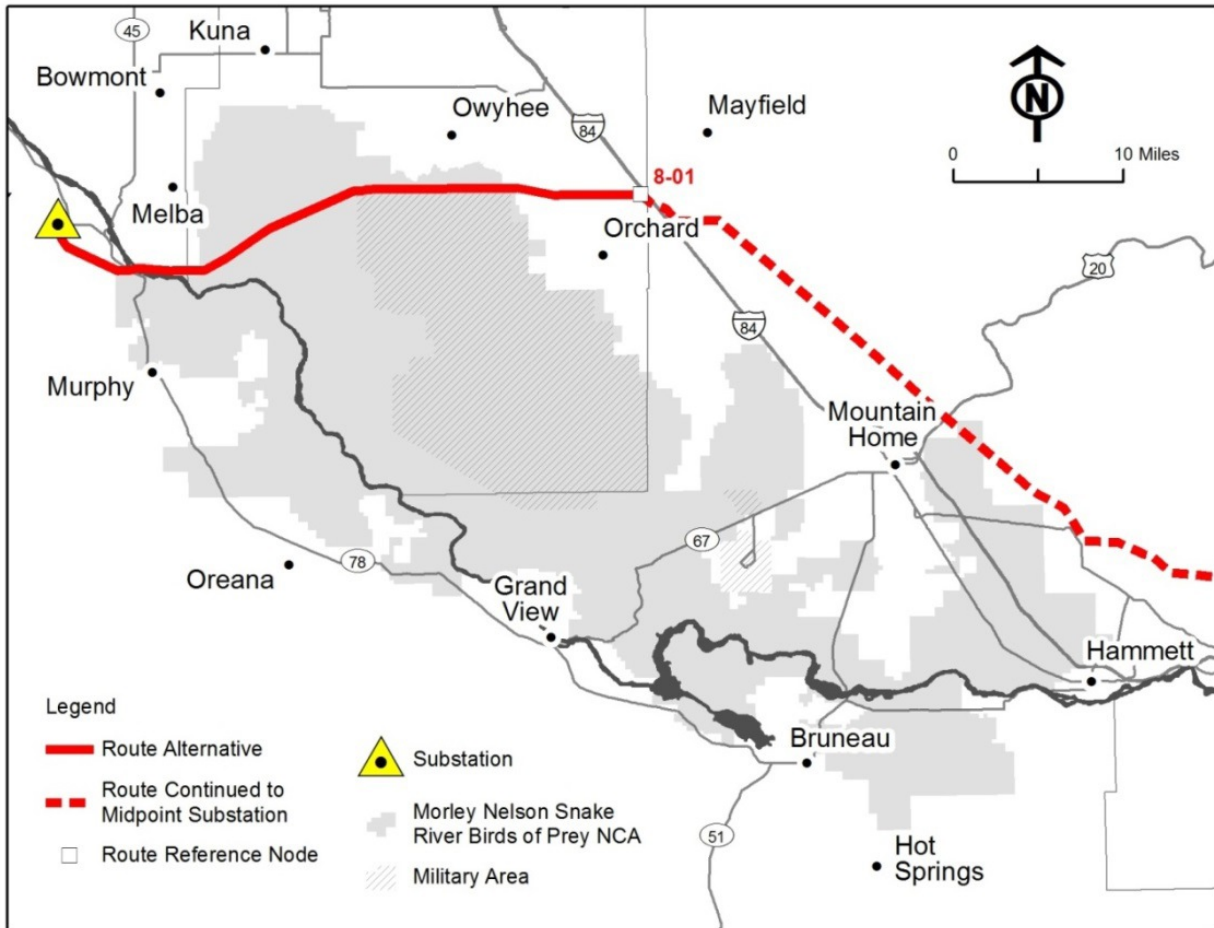
A detailed description of each route follows. Table 2-1 lists the location and land use features of the Segment 8 and 9 routes. Detailed maps are contained in Appendix A.

**Table 2-1.** Segments 8 and 9 Proposed Route Features

<b>Feature</b>	<b>Segment 8 - Summer Lake Option 1 (miles)</b>	<b>Segment 9 - Baja Road- Murphy Flat South (miles)</b>
Total Length	38	65.8
Ownership		
Bureau of Land Management	26.9	57.7
Bureau of Reclamation	2.7	.1
Private	6.2	5.0
State	2.0	5.5
Land Use		
BOPNCA	40.2	53.8
Orchard Combat Training Center	.5	0
Adjacent to Existing Transmission Lines	28.7	31

## 2.1 Segment 8

The majority of the Boise RAC Subcommittee concluded that the best route for Segment 8 is Summer Lake Option 1. The route option parallels the existing Midpoint to Hemingway 500-kV transmission line across the BOPNCA (Figure 2-1). As presented to the RAC Subcommittee by the Companies, the updated Western Electricity Coordinating Council (WECC) separation criteria allows the new transmission line to be 250 feet from the existing line under certain conditions (see Section 3.1). The RAC Subcommittee concluded that this route should minimize vegetation disturbance by reducing the amount of new access roads to be constructed and maintained within the BOPNCA and elsewhere.



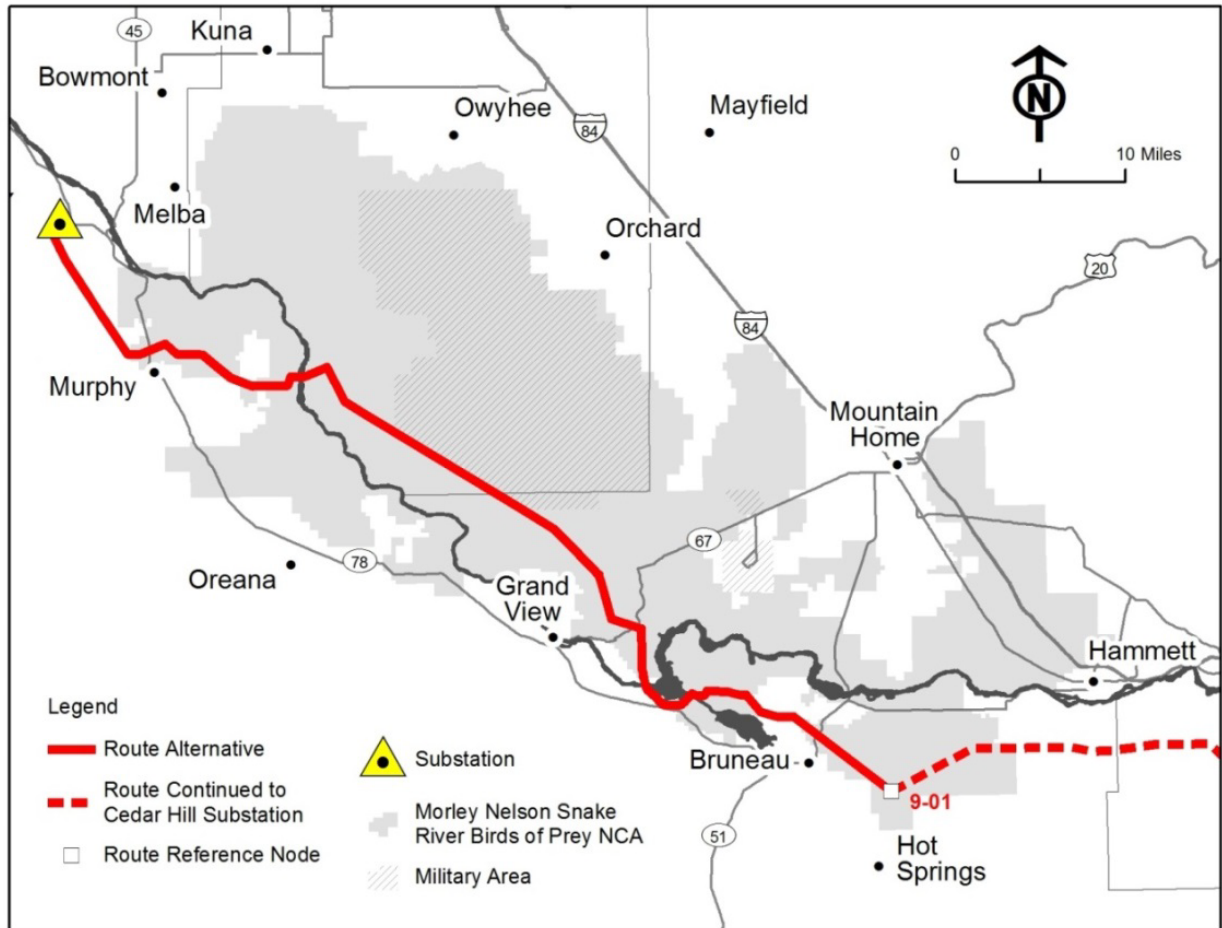
**Figure 2-1.** Summer Lake Option 1

The Summer Lake Option 1 route option begins at milepost (MP) 0.0 (MP 91.4 of the overall Segment 8 route and identified as 8-01 in Figure 2-1) and generally parallels the existing Midpoint to Hemingway 500-kV transmission line, running about 1,500 feet south of the line before turning northwest and then crossing the existing line at MP 7.1. From there, the alignment generally parallels 250 feet north of the existing line for the remaining 30 miles into the Hemingway Substation. At MP 8.2, the alignment crosses into the BOPNCA and follows the existing Midpoint to Hemingway 500-kV transmission line for approximately 8 miles, north of the boundary to the OCTC. At MP 12.7, the alignment crosses Pleasant Valley Road and continues west for approximately 3.5 miles. To avoid new agricultural impacts on private property and to minimize impacts to the OCTC's tank maneuver Alpha Sector, the alignment shifts south 250 feet at MP 16.2 and assumes the existing ROW of the Midpoint to Hemingway 500-kV transmission line. A 1.1-mile section of the existing Midpoint to Hemingway 500-kV line will be rebuilt 250 feet south within the Alpha Sector. At MP 16.8, the two routes resume their previous alignments, with the new Summer Lake Option 1 route 250 feet north of the existing Midpoint to Hemingway 500-kV line. The route crosses Swan Falls Road at MP 22.2 and the existing Bowmont to Canyon Creek 138-kV transmission line at MP 22.9. At MP 27, the alignment turns west (still parallel to the existing line), leaving the BOPNCA at MP 27.2, and crosses 2 miles of irrigated agriculture at the Canyon and Ada county lines, north of Celebration County Park, before crossing the Snake River between MPs 30.9 and 31.3 at the southern end of Noble

Island. The alignment then turns northwest and parallels the existing line for approximately 5 miles (crossing Hemingway Butte at MP 35.2), before turning north through the existing China Gulch subdivision and into the Hemingway Substation. Table 2-1, above, lists the features of the Segment 8 route.

## **2.2 Segment 9**

The majority of the Boise RAC Subcommittee members concluded that the best route for Segment 9 is Baja Road-Murphy Flat South. This route begins at MP 0.0 (MP 95.6 of the overall Segment 9 route and identified as 9-01 in Figure 2-2). This option will move the existing 138-kV line from its own structures to become part of a double-circuit structure also containing the new 500-kV line for most of the distance through the BOPNCA. The new double-circuit line will incorporate and replace existing 138-kV line near C.J. Strike Reservoir in Owyhee County and along Baja Road on public land in Ada and Elmore counties. The line will cross the Snake River near C.J. Strike Dam and above Swan Falls, near Sinker Butte, where an existing 138-kV transmission line crosses the Snake River. The new 500-kV line will traverse public land on Murphy Flat, avoiding historic Oregon Trail ruts. It will cross Highway 78 near the Rabbit Creek Trailhead, and continue north to the Hemingway Substation, outside of preliminary priority sage-grouse habitat and mainly out of view from most subdivisions in Owyhee County. The advantages of this route are that it will 1) minimize impacts on communities and private property in Owyhee County, 2) minimize the amount of new road that to be constructed and maintained within the BOPNCA and in unroaded areas in Owyhee County, and 3) minimize the construction of transmission towers and roads near greater sage-grouse leks and within greater sage-grouse habitat. Table 2-1, above, lists the features of the Segment 9 route.



**Figure 2-2.** Baja Road-Murphy Flat South

The Baja Road-Murphy Flat South route generally follows the previous alignment for Alternative 9G studied in detail in the Final EIS. Beginning south of Bruneau Dunes State Park, within the BOPNCA, the route leaves the established utility corridor in a northwesterly direction, crossing State Route (SR) 51 at MP 5.5, and leaving the BOPNCA at MP 6.7. At MP 10.3, the route re-enters the BOPNCA, double-circuiting with the existing C.J. Strike to Bruneau Bridge 138-kV transmission line near or on the current ROW for approximately 3.3 miles. At MP 14, the two circuits separate for approximately 0.2 mile to permit a more feasible crossing of the Narrows between C.J. Strike Reservoir and the Bruneau Arm. On the west side of the Bruneau River, the two lines again become a double-circuit line across the Cove non-motorized and recreation areas, west approximately 2.1 miles to the C.J. Strike Dam, where the existing 138-kV line double-circuits with the existing Evander Andrews to C.J. Strike 138-kV line north toward Mountain Home. The route parallels the existing double-circuit 138-kV line approximately 200 feet to the west for 4 miles, crossing the Snake River downriver of the C.J. Strike Dam between MPs 17 and 18. At MP 20.8, the alignment shifts west, and then north again, to avoid encroachment in the Mountain Home Air Force Base-controlled airspace and to avoid new impacts to private agricultural lands. At MP 24.8, the alignment crosses the Grand View Highway and then joins the existing Bowmont to Canyon Creek 138-kV transmission line in a new double-circuit alignment along the south side of the Big Baja Road. The new double-circuit alignment proceeds northwest, generally parallel to Big Baja Road and adjacent to the southern

boundary of the OCTC, for 20.2 miles to a location southeast of Swan Falls and north of Tick Basin. Here, the two circuits separate before crossing the Snake River canyon between MPs 47.3 and 47.8 near the existing Sinker Creek to Tap 138-kV transmission line crossing south of Sinker Butte. On the west side of the canyon, the route turns briefly south, parallel to the existing 138-kV line, and then turns west adjacent to the existing Sinker Creek Substation access road. At MP 50.8, the route turns northwest along the east and west faces of several low hills to minimize impacts to irrigated agriculture and to the Oregon National Historic Trail. Near MP 56, the route descends off of the Murphy Rim and crosses the Con Shea Basin north of Murphy. After crossing SR 78 at MP 57.7 north of the Rabbit Creek trailhead, the alignment rejoins the original Segment 9 Proposed Route and continues in a northwesterly direction for approximately 9.5 miles into the Hemingway Substation.

## **2.3 Lower Voltage Transmission Line and Substation Removal**

With acceptance of the August 2014 MEP, removal and modifications of certain lower voltage transmission lines and associated facilities will occur as described below.

### **2.3.1 Swan Falls to Bowmont Transmission Line**

The existing Swan Falls to Bowmont transmission line is a 46-kV line that occurs within a 40-foot wide ROW and crosses approximately 10.8 miles of public lands managed by the BLM (Figure 2-3). As part of the August 2014 MEP, Idaho Power Company (Idaho Power) will remove approximately 7 miles of line on BLM-managed lands, including all structures (although structures may remain if requested by BLM), from the Bowmont Substation to Gage Substation; Idaho Power will continue to use the existing line from the Gage Substation to Ferry Substation to serve its customers. Idaho Power will construct an approximately 1-mile long section to connect the remaining portion of the line to the Idaho Power system. It is expected that the new construction will occur on private land. In addition, approximately 3.9 miles of existing 12.5-kV lines, including 0.25 mile on BLM lands, will be reconstructed. Further, approximately 4 miles of the existing 46-kV line on existing BLM ROW between the Gage and Ferry substations will be converted to a 12.5-kV distribution line. This will require a neutral conductor to be strung on the existing structures, and may also require structure replacements. Idaho Power is also proposing to remove the existing Gage Substation and associated equipment and apparatus. The Gage Substation is on BLM-managed land.

The following summarizes the planned facility removals and modifications affecting the Swan Falls to Bowmont transmission line and facilities:

- Remove approximately 7 miles of existing 46-kV line between the Bowmont and Gage substations.
- Remove Gage Substation.
- Convert approximately 4 miles of existing 46-kV Gage to Ferry/Swan Falls line to 12.5 kV. Structure replacements may be necessary.
- Reconstruct approximately 3.9 miles of existing lines south of Melba including 0.25 mile on public land. Structure replacement on reconstructed lines is assumed to be necessary.

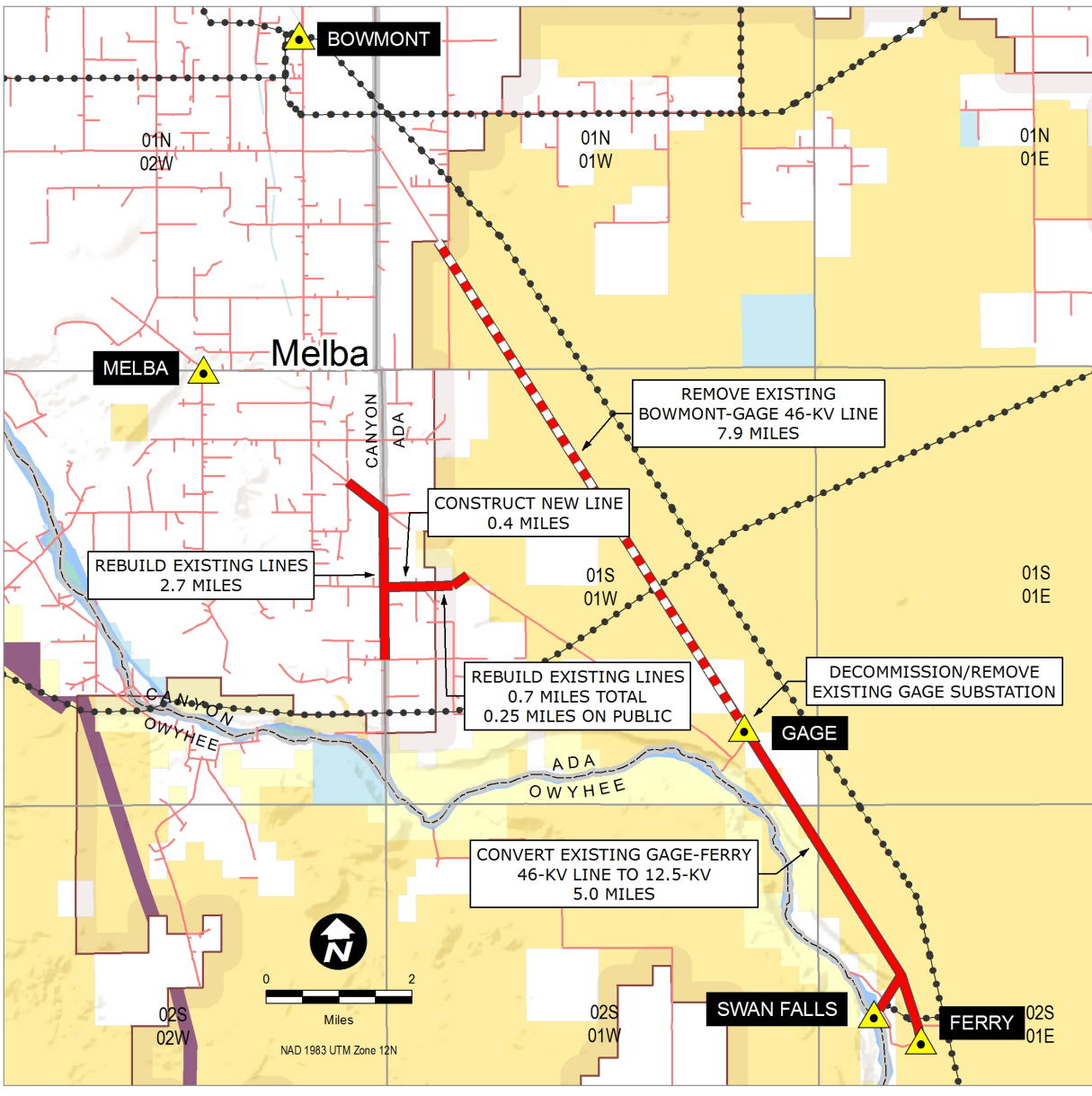
### **2.3.2 Mountain Home to Bennett Transmission Line**

The existing Mountain Home to Bennett transmission line (Line 210) is a 69-kV line with distribution underbuild (Figure 2-4). The 5.6 miles of the line on the BOPNCA without any distribution underbuild will be removed, including all structures (although structures may remain if requested by the BLM). Idaho Power will continue to use the remaining portion of the line to serve customers. Idaho Power will also reconstruct approximately 2.2 miles of the existing

feeder connection for the Sailor Creek (Glenn's Ferry), all of which is on private lands. Idaho Power will conduct maintenance on the remaining portion of the line; this will be determined as part of the engineering analysis to support the removal.

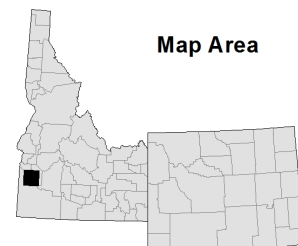
The following summarizes the planned facility removals and modifications affecting the Mountain Home to Bennett transmission line and facilities:

- Remove 5.6 mile portion of existing 69-kV Mountain Home-Bennett line.
- Reconstruct 2.2 miles of Sailor Creek (Glenn's Ferry) feeder line. Structure replacement on reconstructed lines is assumed to be necessary.



## Legend

- |   |   |
|---|---|
| <span style="color: red;">—</span> New or Rebuild Existing Line   | <span style="background-color: #f4a460; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> Bureau of Land Management                   |
| <span style="color: red;">- - -</span> Remove Existing Line       | <span style="background-color: #fff9c4; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> Bureau of Reclamation                       |
| <span style="color: black;">●—●</span> Existing Transmission Line | <span style="background-color: #c8e6c9; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> Fish and Wildlife Service                   |
| <span style="color: red;">—</span> Existing Distribution Line     | <span style="background-color: #ffffff; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> Private                                     |
| <span style="color: yellow;">▲</span> Substation                  | <span style="background-color: #bbdefb; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> State Land                                  |
|   | <span style="background-color: #b3e5fc; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> Water                                       |
|   | <span style="background-color: #f8bbd0; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> Morley Nelson Snake River Birds of Prey NCA |

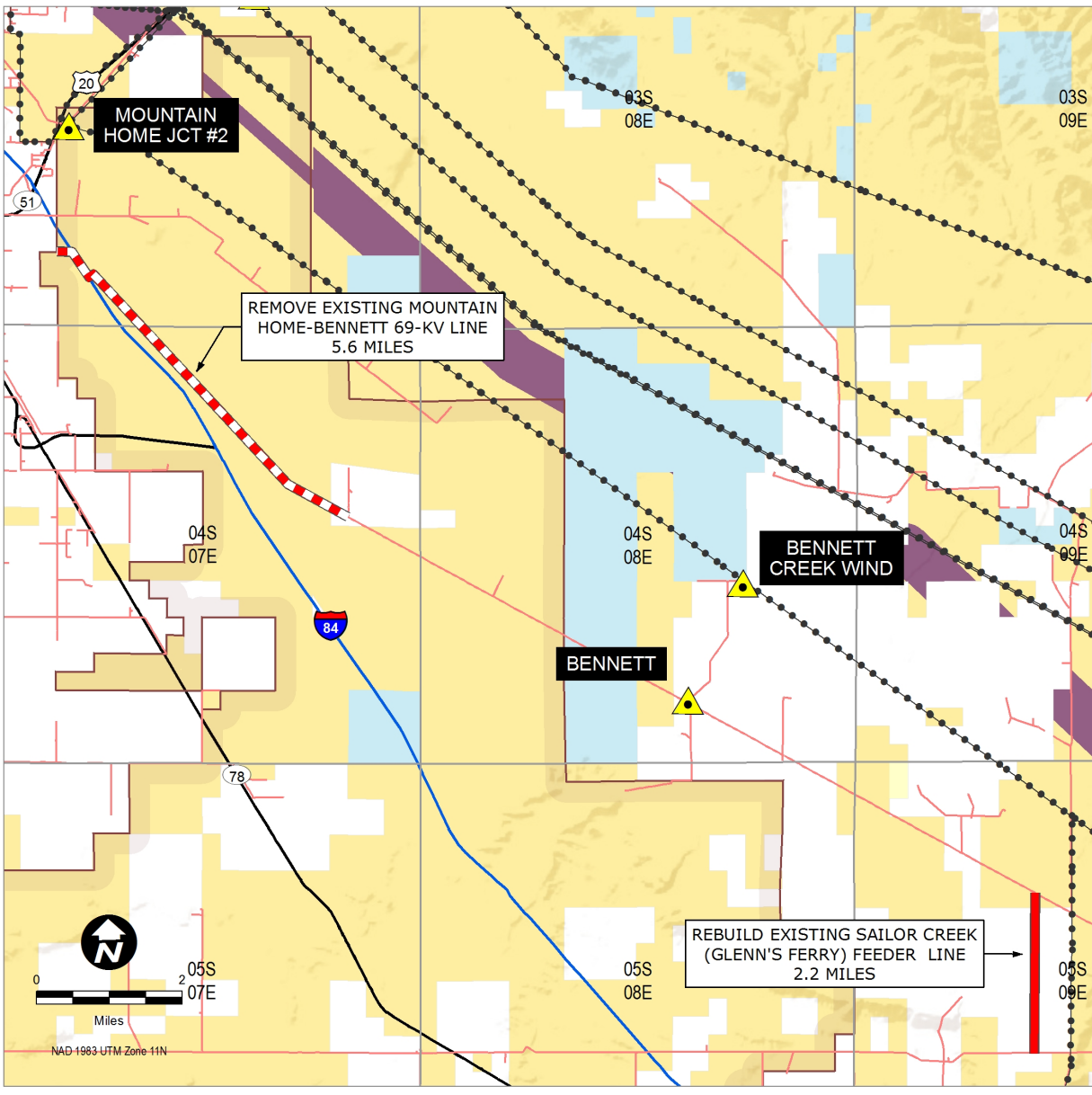


Sources: Idaho Power, BLM, ESRI, Ventyx

IPC\_Rebuild Remove\_Gage-Ferry\_20140730 Scott Flinders 8/1/2014

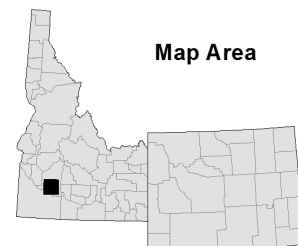
**Figure 2-3.** Swan Falls to Bowmont Transmission Line Modifications





## Legend

- |   |   |
|---|---|
| <span style="color: red;">—</span> New or Rebuild Existing Line   | <span style="background-color: #f4a460; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> Bureau of Land Management                   |
| <span style="color: red;">- - -</span> Remove Existing Line       | <span style="background-color: #fff9c4; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> Bureau of Reclamation                       |
| <span style="color: black;">●—●</span> Existing Transmission Line | <span style="background-color: #fff176; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> Private                                     |
| <span style="color: red;">—</span> Existing Distribution Line     | <span style="background-color: #bbdefb; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> State Land                                  |
| <span style="color: yellow;">▲</span> Substation                  | <span style="background-color: #fce4ec; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> Morley Nelson Snake River Birds of Prey NCA |
|   | <span style="background-color: #9c27b0; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> West-wide Energy Corridor (WWEC)            |



Sources: Idaho Power, BLM, ESRI, Ventyx

IPC\_Rebuild Remove\_Bennett\_20140730 Scott.Flinders 8/1/2014

**Figure 2-4.** Mountain Home to Bennet Transmission Line Modifications



## 3.0 DESIGN CHANGES

Section 4.0 of the August 2013 POD provides a detailed description of the transmission facilities design features associated with the Gateway West segments requiring new transmission line construction, and is incorporated herein by reference. The discussion below focuses on additional design changes applicable to Segments 8 and 9 within or near the BOPNCA.

### 3.1 Segment 8 Line Separation

As part of their evaluation, the RAC Subcommittee asked the Companies about the feasibility of reducing the separation between the proposed Segment 8 single-circuit 500-kV transmission line and the existing 500-kV Midpoint to Hemingway line. The Companies reported that based on changes in WECC reliability criteria, line separation could be reduced in this case to approximately 250 feet. Based on the Companies' response, the RAC Subcommittee recommended a separation reduction across the BOPNCA, and the Companies have incorporated that change into a 28.7-mile portion of Segment 8. Figure 3-1 shows the reduced line separation ROW design and location of reduced separation to the existing Midpoint to Hemingway line.

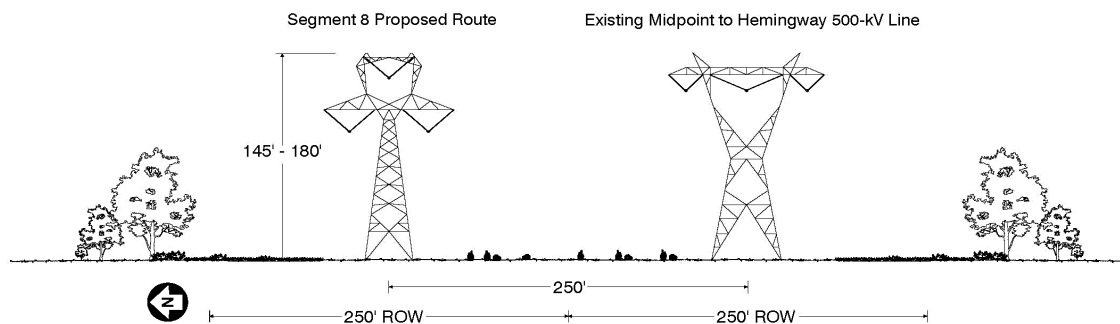
At the time the Gateway West Final EIS was prepared, the WECC recommended that high-voltage transmission lines be separated by at least "the longest span length of the two transmission circuits at the point of separation or 500 feet, whichever is greater, between the transmission circuits" (WECC 2008). For Gateway West, the longest span length was assumed to be 1,500 feet, thereby dictating the minimum distance between existing and proposed transmission lines serving the same load (BLM 2013a).

The regional transmission planning criteria and guidelines were derived from planning standards developed by the North American Electric Reliability Council and were designed to reduce the risk of the following:

- A tower falling into an adjacent line
- A snagged shield wire dragged into adjacent line
- An aircraft flying into more than one circuit
- Fire, smoke, or dust shorting more than one circuit
- Lightning strikes affecting more than one line

In December 2011, WECC and the WECC Board of Directors relaxed its regional transmission planning criterion to a minimum of 250 feet from an existing line (BLM 2013a). This change became effective in April 2012. The separation of transmission lines within a common corridor or lines serving the same load is measured between the centerlines of the transmission lines. All utilities participating in WECC are still responsible for preventing outages and must use the best available planning and engineering to estimate the risk of outages regardless of separation. Under certain limited circumstances, the Companies are willing to consider reducing the separation between high-voltage lines for limited distances and under restricted circumstances.

The Companies plan to use existing roads near and beneath the existing 500-kV transmission line to minimize the overall disturbance footprint of the new line. Rather than constructing a completely new access road network for the Summer Lake Option 1 route, they will use short spur roads from existing roads to provide access to new towers.



Proposed 500-kV Single-Circuit Lattice Steel Tower Adjacent to the North Side of the Existing Midpoint to Hemingway Line (MPs 7.3 to 36)

**Figure 3-1.** Proposed Reduced Line Separation ROW Design Locations

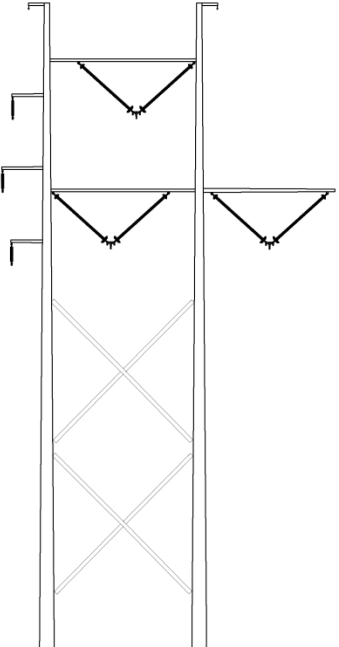
### 3.2 Segment 9 Double-Circuit Segment

As part of their evaluation, the RAC Subcommittee asked the Companies about the feasibility of co-locating (double-circuiting) 5.4 miles of the existing CJ Strike to Bruneau Bridge and 20.2 miles of the Bowmont to Canyon Creek 138-kV transmission lines and on the same structures with the proposed Segment 9 single-circuit 500-kV line<sup>1</sup>. The Companies reported that double-circuiting would be feasible and have incorporated this change into the proposed Project.

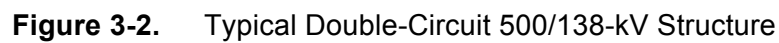
Table 3-1 describes facility features for the double-circuit portion of Segment 9 in the BOPNCA that will be double-circuit. Figure 3-2 shows a sketch of the proposed double-circuit 500/138-kV structure. Figure 3-3 shows the ROW design configuration for the double-circuit portion of Segment 9 within the BOPNCA.

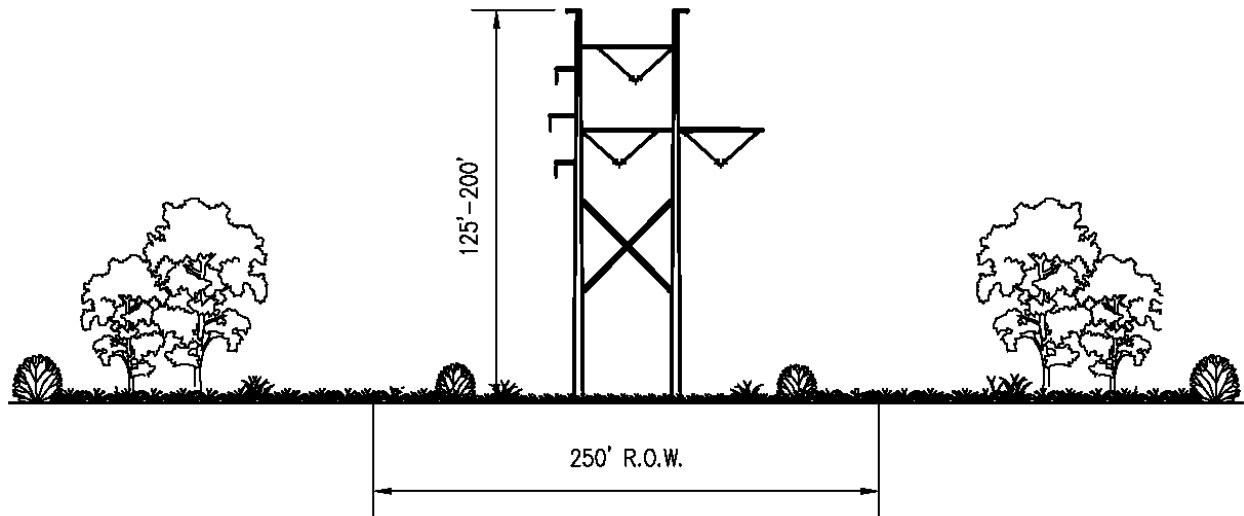
<sup>1</sup> In addition, the 138 and 500-kV circuits will separate on to single-circuit structures for approximately 0.2 mile to permit a more feasible crossing of the Narrows between C.J. Strike Reservoir and the Bruneau Arm.

**Table 3-1. Summary of Segment 9 Project Transmission Facilities**

Project Facility	Description
<p><b>Double-Circuit 500/138-kV portion of Segment 9 in the BOPNCA</b></p> 	<ul style="list-style-type: none"> <li>• Three-phase 138-kV and three-phase 500-kV construction for all structure designs, conductor spacing and clearances<sup>1/</sup>.</li> <li>• 500-kV Conductor: Bundled 1949.6 kcmil 42/7 aluminum conductor steel reinforced (ACSR)/TWD "Athabaska/TW", with three subconductors per phase. Non-specular (dull) finish rather than a shiny finish. <ul style="list-style-type: none"> <li>○ Estimated subconductor diameter: 1.51 inches.</li> <li>○ 500-kV Bundle spacing: Distance between subconductors is 18 inches and 25 inches.</li> </ul> </li> <li>• 138-kV Conductor: Single 715 kcmil 26/7 aluminum conductor steel reinforced (ACSR) "Starling". Non-specular (dull) finish rather than a shiny finish. <ul style="list-style-type: none"> <li>○ Estimated conductor diameter: 1.05 inches</li> </ul> </li> <li>• Non-reflective, non-refractive insulators.</li> <li>• One optical ground wire (OPGW) containing 48 fibers with diameter of 0.64 inch.</li> <li>• One EHS steel overhead ground wire with diameter of 0.50 inch.</li> <li>• Minimum ground clearance: <ul style="list-style-type: none"> <li>○ 138-kV: 24 feet</li> <li>○ 500-kV: 35 feet</li> </ul> </li> <li>• Structure types: double-circuit steel H-frame structures, dull galvanized or self-weathering steel.</li> <li>• Above-ground structure height: varies between 125 and 200 feet.</li> <li>• Approximate distance between structures: 900 to 1,200 feet.</li> <li>• ROW width: 250 feet</li> <li>• The exact quantity, distance between, and placement of the structures will depend on the final detailed design of the transmission line, which is influenced by the terrain, land use, environmental constraints, and economics. Alignment options may also slightly increase or decrease the quantity, location, and height of structures.</li> </ul>

<sup>1/</sup> Project design follows the Avian Power Line Interaction Committee recommendations. Details for tower construction and components such as conductor spacing are provided in the August 2013 POD.





**Figure 3-3.** Double-Circuit 500/138-kV ROW Design

## **4.0 CONSTRUCTION AND OPERATION**

### **4.1 Construction**

Appendix B, Section 3.0 of the previously published POD describes the methods of constructing of the portions of Gateway West within the BOPNCA. Since the publication of the POD, the Companies have recommended and accepted the following modifications as part of the Project for portions of Segments 8 and 9 within the BOPNCA and provide new construction related information.

Segment 9 will construct approximately 25.6 miles of new double-circuit 500/138-kV transmission line. The construction methods for the steel pole H-Frame double-circuit 500/138-kV structure (Figure 3-2) are similar to the steel pole H-frame single-circuit structure described in Appendix B, of the August 2013 POD, Transmission Line and Substation Components.

The following sections describe the methods for removal of 25.6 miles of the existing C.J. Strike to Bruneau Bridge 138-kV and Bowmont to Canyon Creek 138-kV lines as described in Section 2.2 and removal and reconstructing of lower voltage lines and modify associated facilities upon approval of the August 2014 MEP as described in Section 2.3. The Companies propose to work with the BLM to identify structures the BLM would like to retain within BLM-managed lands. Those structures will still need to be accessed to remove the hardware and conductors but could be left if desired.

#### **4.1.1 Access for Removal of Lines**

In order to construct the double-circuit 500/138-kV line or reconstruct lower voltage lines, the existing lines must be removed. The 138-kV line will be replaced in its entirety, including structures. The lower voltage lines will be reconstructed using a combination of reconducturing and structure replacement as needed. The lower voltage lines access can generally be confined to 15 feet to one side of the existing line.

Existing access roads or overland travel, including the roads and trails used for construction, maintenance, and inspection of the line, will be used to remove the existing line. All roads or access ways or required disturbance areas used for line removal work will be surveyed, cleared, and staked prior to any construction. On completion of line removal work, all access or spur roads shall be removed in their entirety and in accordance with project requirements and restrictions.

#### **4.1.2 Site Preparation**

In general, the existing pads surrounding existing structures are sufficient to allow access for the bucket trucks and small cranes needed to remove the structures. If needed, vegetation on the existing pads may be cut or crushed to allow safe equipment access. Grading will be used only if essential for worker safety. Erosion control measures as specified in the Stormwater Pollution Prevention Plan and Appendix Z of the August 2013 POD will be employed where needed.

#### **4.1.3 Remove Conductors**

The next step after establishment of access and a safe work area for the lineworkers is to remove the conductors and shield wire. To remove the conductors, the line is taken out of service. Bucket trucks are generally used to hoist the workers to the wire positions to allow workers to remove the hardware holding the wires in place, and drop the wires to the ground. In some cases, workers may climb the structures to accomplish this. A wire spooling machine is attached to one end of each wire after the wires are all on the ground. Each wire is wound onto reels to be hauled to one of the designated multi-use yards or to an approved off-site disposal

area. Guard equipment or structures will be deployed where energized lines are crossed to prevent the wires being removed from coming in contact with the energized wires.

#### **4.1.4 Remove Transmission Structures**

Structure removal follows wire removal. In most cases, a 20- to 30-ton lift capacity crane attaches to the structure's upper section and holds it in place while the poles are cut off near ground and the structure is laid to the ground for disassembly. In a few instances, workers in bucket trucks or climbing remove the insulators, hardware, braces, and crossarms in the air and lower them to the ground, leaving the poles standing. Once all the equipment has been removed, the poles are cut off near ground and allowed to fall (or may be supported by crane and lowered to ground). Guy wires and anchors, if any, will be removed at the same time. All materials are loaded onto trucks and hauled to a multi-purpose yard or to a preapproved disposal site. Any treated wood that is given away to an outside party will be accompanied by a Bill of Sale and Consumer Information Sheets that describe any health and environmental risks associated with different types of treated wood (i.e., proper and improper uses).

#### **4.1.5 ROW Site Reclamation**

After conductors, structures, and associated hardware have been removed, workers dig out around the base of the remaining pole section and cut off the pole below ground. The resulting holes are filled and compacted with soils that have been approved for backfill and from approved sources if not available on-site. The final step is to remove and restore work areas, pads, and other disturbed areas to a condition agreed upon by the landowner, tenant or managing agency. Appendix D of the August 2013 POD, the Reclamation Plan, and Appendix Z, Mitigation Measures, contain the plans and requirements for site restoration and reclamation.

#### **4.1.6 Gage Substation Removal**

The Gage substation is currently located within a 50-foot by 50-foot fenced area. Removal will require a disturbance area of approximately 100 feet by 100 feet to provide adequate space to remove the entire station. The existing fence and transformer will be removed as will the foundations and miscellaneous concrete to below ground level. The existing 46-kV transmission line will continue to pass through the site and connect to the existing 46-kV line to Ferry Substation and Swan Falls Power Plant. Once construction removal activities are complete, the site will be reclaimed. Appendix D of the August 2013 POD, the Reclamation Plan, and Appendix Z, Mitigation Measures, contain the plans and requirements for site restoration and reclamation.

### **4.2 Operation**

Appendix B, Section 4.0 of the August 2013 POD describes routine and emergency response measures the Companies will employ during operation. These measures apply without change to the Project as proposed in the SF-299 and this POD Supplement for Segments 8 and 9.

## **5.0 DECOMMISSIONING**

Appendix B, Section 5.0 of the August 2013 POD describes how the proposed transmission line would be removed from service at the end of the useful life of the Project including dismantling and removal of conductors, insulators, and hardware from the ROW. Structures would be removed, foundations would be removed to below ground surface, and following abandonment and removal of the transmission line structures and equipment, any areas disturbed during line dismantling would be reclaimed and rehabilitated. No changes are proposed to this approach in this POD Supplement.

As part of the August MEP described in Appendix B, portions of two existing lower-voltage power lines and one substation owned by IPC from areas within the BOPNCA will be removed. The removal methods will be the same as described in Appendix B, Section 5.0 of the August 2013 POD except that the BLM may specify that one or more power poles be left for perching and nesting opportunities for birds of prey.

## 6.0 MITIGATION AND ENHANCEMENT PORTFOLIO

The August 2014 MEP from the Companies included as Appendix B to this POD Supplement is intended to offer sufficient mitigation and enhancement for the resources and values for which the BOPNCA was designated to allow the BLM to complete its decision process for Segments 8 and 9 of the Project and issue a ROD for these segments. It was first submitted to the BLM as part of the Companies' comments on the Final EIS in 2013 and entered into the Administrative Record at that time. Subsequent to the issuance of the ROD, the Companies continued conversations with the BLM and subsequently with the Boise RAC and the RAC Subcommittee. A version of the MEP was issued in January 2014 and another version shared with the RAC Subcommittee in March 2014. Additional comments were provided by BLM in August 2014. The August 2014 MEP has been updated since the version prepared for the RAC Subcommittee and reflects the Companies' responses to the RAC Subcommittee recommendations and BLM comments.

## 7.0 LITERATURE CITED

- BLM (U.S. Department of the Interior, Bureau of Land Management). 2013a. Final Environmental Impact Statement for the Gateway West Transmission Line Project. Wyoming State Office. Case File Numbers WYW-174598; IDI-35849. Cheyenne, WY. April 26.
- BLM. 2013b. Record of Decision for the Gateway West Transmission Line Project. Wyoming State Office. Case File Numbers WYW-174598; IDI-35849. Cheyenne, WY. November 12.
- Boise RAC Subcommittee (Boise District Resource Advisory Council Subcommittee). 2014a. Boise District Resource Advisory Council Subcommittee Report on Gateway West Segments 8 and 9 Route Options In or Near the Morley Nelson Snake River Birds of Prey National Conservation Area.
- Boise RAC Subcommittee. 2014b. Boise District Resource Advisory Council Subcommittee Review and Comments on the Gateway West Transmission Line Project Mitigation and Enhancement Portfolio for the Morley Nelson Snake River Birds of Prey National Conservation Area.
- IPC and RMP (Idaho Power Company and Rocky Mountain Power). 2013a. Gateway West Transmission Line Project Plan of Development. August.
- IPC and RMP (Idaho Power Company and Rocky Mountain Power). 2013b. Gateway West Transmission Line Project Plan of Development. January.
- WECC (Western Electricity Coordinating Council). 2008. TPL – (001 thru 004) – WECC – 1 – CR – System Performance Criteria. Available online at <http://www.wecc.biz/Standards/WECC%20Criteria/Forms/AllItems.aspx>



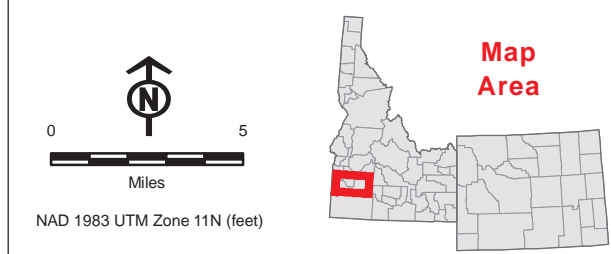
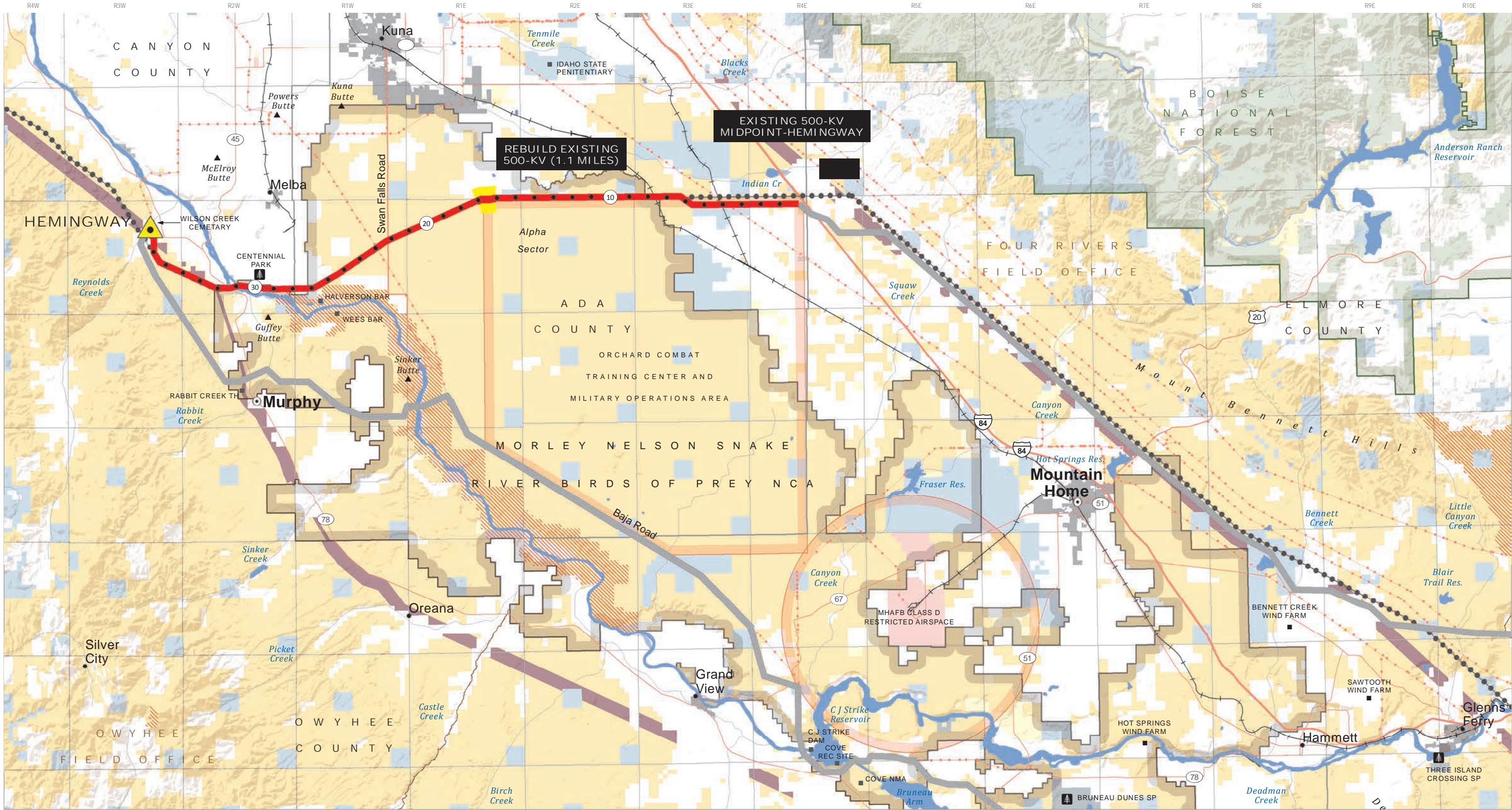
## **APPENDIX A LOCATION MAPS**

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- Segment 8**
- Summer Lake Option 1
  - Rebuild Existing 500-kV
  - Other Route

- Other Features**
- Substation
  - Ten Mile
  - Mile
  - Existing Midpoint-Heminway 500-kV Line
  - Existing Transmission Lines (138-kV or greater)
  - West Wide Energy Corridor (WVEC)
  - Protected Area or Restricted Access

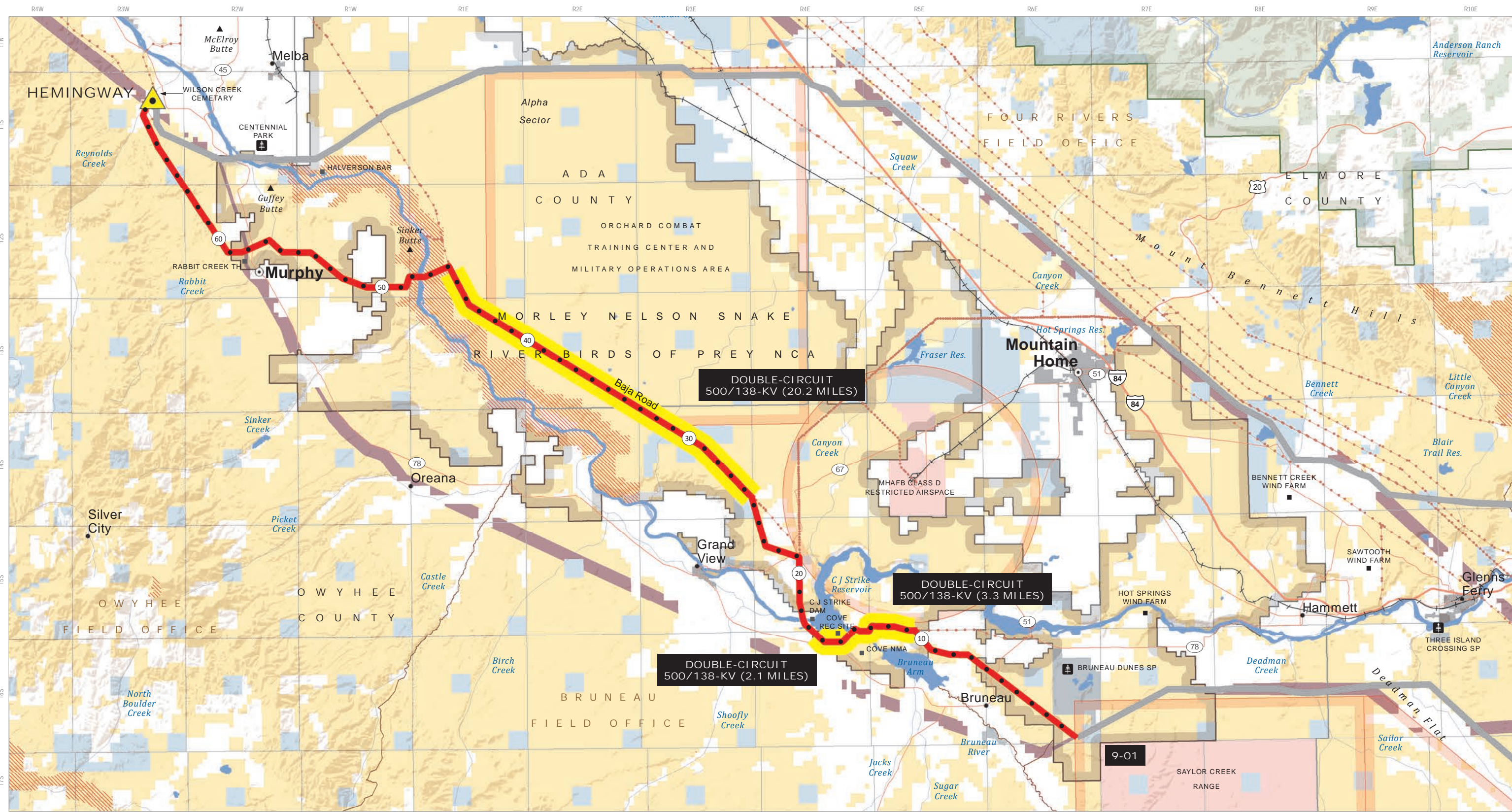
- Land Status**
- City Limits
  - Bureau of Land Management
  - National Forest
  - Fish and Wildlife Service
  - Bureau of Reclamation
  - Military Reservation/Corps of Engineers
  - State
  - State Wildlife, Park, Recreation or Other
  - Private



Gateway West  
Transmission Line Project

**Segment 8**  
**Summer Lake Option 1**  
Appendix A-2





NAD 1983 UTM Zone 11N (feet)

**Map Area**

**Segment 9**

- Baja Road-Murphy Flat South
- Double-circuited Portion
- Other Route

**Other Features**

- Substation
- Ten Mile
- Mile
- Existing Transmission Lines (138-kV or greater)

- West Wide Energy Corridor (WVEC)
- Protected Area or Restricted Access
- City Limits

**Land Status**

- Bureau of Land Management
- National Forest
- Fish and Wildlife Service
- Bureau of Reclamation

- Military Reservation/Corps of Engineers
- State
- State Wildlife, Park, Recreation or Other
- Private

ROCKY MOUNTAIN POWER  
A DIVISION OF Xcel Energy

IDAHO POWER  
AN EXCEL Energy Company

Gateway West  
Transmission Line Project

**Segment 9**  
**Baja Road-Murphy Flat South**  
Appendix A-3



**APPENDIX B**  
**MORLEY NELSON SNAKE RIVER BIRDS OF PREY NATIONAL**  
**CONSERVATIONN AREA DRAFT MITIGATION AND ENHANCEMENT**  
**PORTFOLIO PROPOSAL**

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See Appendix C-1 of the SEIS to view the August 2014 Draft Mitigation and Enhancement Portfolio.

## **Gateway West Transmission Line Project Addendum to August POD Supplement Use of Baja Road and Disturbance Calculations**

On August 7, 2014 PacifiCorp, doing business as Rocky Mountain Power (RMP), and Idaho Power Company's (IPC) collectively the Companies submitted to Bureau of Land Management (BLM) a Plan of Development Supplement for the Gateway West Transmission Line (Project or Gateway West). This addendum to the supplement describes use of the Baja Road and disturbance during construction and operation.

### **1.0 BAJA ROAD**

Baja Road is the access road used for construction and maintenance of the existing 138-kV transmission lines. These lines would be removed and reconfigured onto a double-circuit 500/138-kV structure series for approximately 26.5 miles of which, 18.3 miles is in the SRBOP and adjacent to Baja Road as part of the Baja Road-Murphy Flat South alternative identified by the Boise District Resource Advisory Council (RAC) and adopted by the Companies as part of the Segment 9 Proposed Route. The Companies intend to utilize the existing road with "no improvement". Project-wide, existing roads requiring "no Improvement" include existing maintained paved or all-weather surfaced roads that are able to be used in their current condition (PacifiCorp and Idaho Power, 2013). The Companies' construction standards will be met, including the use of a minimum travel surface width of 14 feet wide and requiring a travel surface width of up to 20 feet depending on the radius of curves. The use of the term 'no improvement' is intended to signify that no additional new disturbance will be created outside of the established disturbed area. As such, the existing roads requiring "no improvement" for access could include regular maintenance to make the road passable for construction. Regular maintenance could include but is not limited to minor blading activities, repair of washed out areas, wash boarded areas, depressions requiring graveling, approach installation, and other minor improvements within the established disturbed area.

The Baja Road meets the criteria for "no improvement". **Figure 1-1** shows the typical condition of the Baja Road adjacent to the existing 138-kv line. The view is looking south and the proposed location of the new double-circuit 500/138-kV line is on the right side of the road.



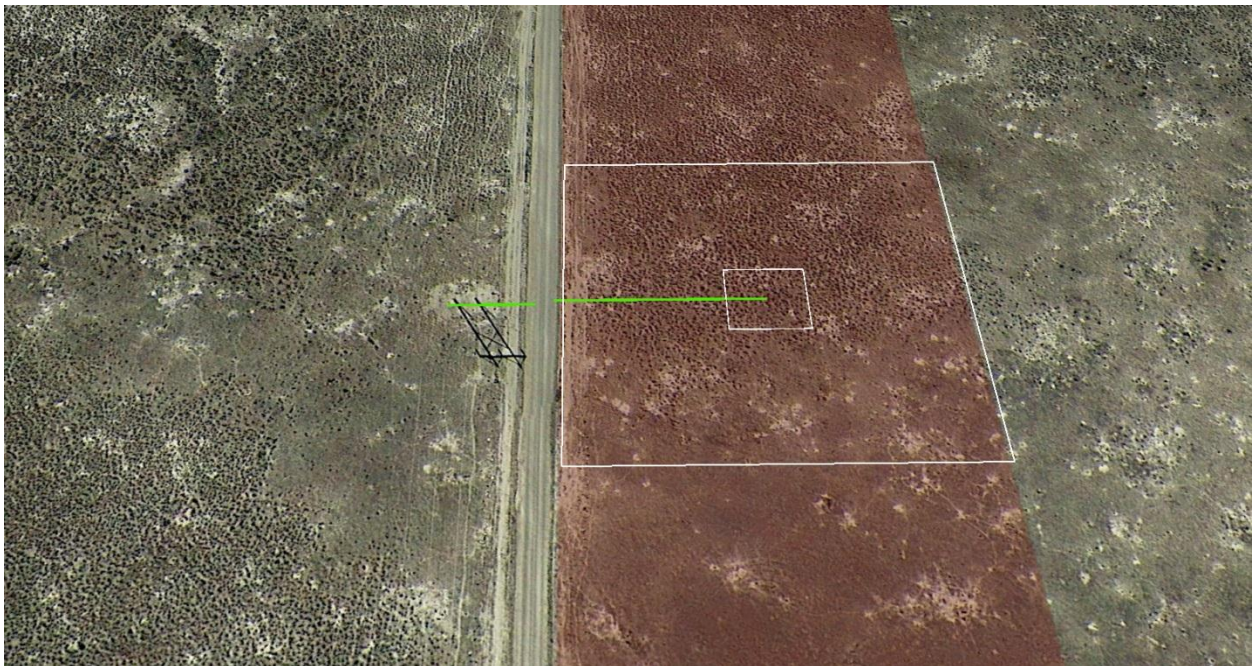
**Figure 1-1. Current Condition of the Baja Road**

Based on aerial imagery and field reconnaissance, the road has a 14 feet wide travel surface and the total established disturbed area or width is approximately 40 feet. The road is generally in excellent condition having been recently restored. There may be a few washboard areas, but the width and gravel surface should be sufficient without any additional improvements outside of the current travel way. The construction concept for installation of the planned 500/138-kV line would involve in most cases a stub road extending from the edge of the existing Baja Road to an approximately 1.4 acre construction pad (**Figure 1-2**). The centerline of the Proposed Route is approximately 140 feet off of the road centerline. The terrain is mostly flat, so overland travel to access the construction pads or structures for operation and maintenance would stay within the Project-wide travel way (14 foot wide during construction and 8 feet wide during operations). **Figure 1-1** and **Figure 1-3** illustrate the terrain and construction pad features.





**Figure 1.2. Conceptual Stub Road Configuration from Baja Road.**



**Figure 1-3. Conceptual Construction Work Area (large white box).**

## 2.0 CONSTRUCTION AND OPERATION DISTURBANCE

The amount of land disturbed during construction and operation is a function of length, extent of facility improvements and location. **Table 2-1** shows the length, extent of new, rebuild and removed facilities and ownership associated with the proposed routes for Segment 8 (Summer Lake Option 1) and Segment 9 (Baja Road-Murphy Flat South).

**Table 2-1. Segments 8 and 9 Proposed Route Features**

Feature	Segment 8 - Summer Lake Option 1 (miles)	Segment 9 - Baja Road- Murphy Flat South (miles)
Total Length	38.3 (1.1 rebuild)	89.3 (20.9 removal)
Ownership		
Bureau of Land Management	27.1 (0.8)	75.3 (17.6)
Bureau of Reclamation	2.7	0.1
Private	6.2 (0.2)	5.1 (0.2)
State	2.0	8.5 (3.1)
Land Use		
BOPNCA	23.1 (1.1)	73.7 (20.9)
Orchard Combat Training Center	0.5	--
Adjacent to Existing Transmission Lines	30.7	55.0 (20.9)

Land disturbance as described in **Table 2-2** is the estimated amount of land that would be disturbed during construction or required to be permanently converted to operational uses. Estimates for construction disturbances are based on best professional judgment and experience with this type of project following the process described in Section 3.1 of the Gateway West EIS. Estimates were made of disturbance areas resulting from each construction activity involving structure placement, access roads, contractor and material staging areas, and new and expanded substations. For each route, the amount of disturbance reflects use of existing access roads meeting the definition of “no improvement” as described above. **Table 2-3** describes the dimensions of the structure construction pads and area permanently occupied by structures after restoration.

**Table 2-2. Summary of Transmission Line Land Disturbance Resulting from Construction and Operations <sup>(1)(2)</sup>**

Segment/Project Component	Land Affected During Construction (acres)	Land Affected During Operations (acres)
<b>Segment 8</b>		
Access - Existing Road, Improved	136	43
Access New Road	21	10
Deadend Pulling - 500-kV (1-SC)	121	-
Fly Yard	112	-
Pad - 500-kV	245	10
Pulling-Tensioning - 500-kV (1-SC)	17	-
Regeneration Site	-	-
Staging Area	40	-
<b>Subtotal - Segment 8</b>	<b>693</b>	<b>63</b>
<b>Segment 9</b>		

**Table 2-2. Summary of Transmission Line Land Disturbance Resulting from Construction and Operations <sup>(1)(2)</sup>**

Segment/Project Component	Land Affected During Construction (acres)	Land Affected During Operations (acres)
Access - Existing Road, Improved	195	60
Access - New Road	76	32
Deadend Pulling - 138-kV (1-SC)	21	
Deadend Pulling - 500/138-kV (1-DC)	96	-
Deadend Pulling - 500-kV (1-SC)	163	-
Fly Yard	212	-
Pad - 138-kV	1	0.2
Pad - 138-kV (Removal)	49	-
Pad - 500/138-kV (1-DC)	255	10
Pad - 500-kV	268	11
Pulling-Tensioning - 138-kV (1-SC)	1	-
Pulling-Tensioning - 500/138-kV (1-DC)	14	-
Pulling-Tensioning - 500kV (1-SC)	15	-
Regeneration Site (3)	1	0.5
Staging Area	60	-
<b>Subtotal - Segment 9</b>	<b>1428</b>	<b>114</b>
<b>Total</b>	<b>2121</b>	<b>177</b>

1/ The exact land requirements would depend on the final detailed design of the transmission line, which is influenced by the terrain, land use, and economics. Alignment options may also slightly increase or decrease these values.

2/ Acreages in table are rounded to the nearest acre; columns therefore may not sum exactly.

3/ Values are given in 0.5-acre increments because regeneration sites are typically 0.5 acre each.

**Assumptions/Notes:**

1. ROW width for the 500-kV single circuit and 500/138-kV double circuit segments are 250 feet.
2. The staging areas would serve as field offices, reporting locations for workers, parking space for vehicles and equipment, sites for material storage, fabrication assembly and stations for equipment maintenance, and concrete batch plants.
3. Staging/material storage yards/batch plants would be approximately 20 acres for single-circuit 500-kV and double-circuit 500/138-kV lines. They would be located at each end of a segment, and every 20 to 30 miles along the line.
4. Fly yards would be 10 to 15 acres located approximately every 5 miles. Values in table assume helicopter construction for all single-circuit 500-kV and double-circuit 500/138-kV construction. The construction contractor may choose to construct using ground-based techniques, therefore not utilizing fly yards.
5. For 500 kV, wiring pulling/splicing sites would be the ROW width x 600 feet located approximately every 3 miles; for 138-kV, ROW width x 400 feet located every 9,300 feet. Typically, only sites that would be off of the ROW would be at large angle dead-ends. It is estimated that one in four sites would be off of the ROW.

**Table 2-3. Summary of Transmission Line Land Disturbance Resulting from Construction and Operations**

Segment	Transmission Line Length (miles)	Structure Type	Typical Height (feet)	No. of Structures	Average Distance Between (feet)	Temporary Disturbance Area per structure (sq. feet.)	Permanent Disturbance Area per structure (sq. feet.)
8, 9	54.6	500-kV Single-Circuit Lattice Tower	145–180	358	1,200–1,300	ROW Width 250 feet x 250 feet = 1.42 acres	ROW Width 50 feet x 50 feet = 0.06 acre
9	0.5	500/138-kV Double-Circuit Lattice Tower	145–180	178	900-1,200	ROW Width 250 feet x 250 feet = 1.43 acres	ROW Width 50 feet x 50 feet = 0.06 acre

### 3.0 REFERENCES

IPC and RMP (Idaho Power Company and Rocky Mountain Power). 2013. Gateway West Transmission Line Project Plan of Development. August.

**Appendix B-2**  
**Proponents' Helicopter-Assisted Construction Assessment**

## **Response to April 12, 2016, BLM Data Request**

### **Use of Helicopter-Assisted Construction along Portions of Segments 8 and 9 of the Gateway West Transmission Line Project**

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June 2016

## TABLE OF CONTENTS

<b>1.0 INTRODUCTION.....</b>	<b>1</b>
<b>2.0 HELICOPTER CONSTRUCTION SCENARIOS .....</b>	<b>3</b>
2.1 Helicopter Support to Conventional Construction.....	3
2.1.1 Tower Erection .....	3
2.1.2 Stringing .....	4
2.1.3 Anticipated Helicopter Support to Conventional Construction in Routes 8G and 9K.....	4
2.2 Helicopter-Assisted Construction .....	5
2.2.1 Construction Access Roads .....	5
2.2.2 Foundation Construction .....	6
2.2.3 Tower Erection .....	7
2.2.4 Stringing .....	7
<b>3.0 HELICOPTER-ASSISTED CONSTRUCTION DETAILS.....</b>	<b>7</b>
3.1 Construction Layout .....	7
3.2 Helicopter Construction Operations .....	8
3.3 Reclamation .....	10
3.4 Operations.....	10
3.5 Disturbance Calculations .....	11
<b>4.0 LITERATURE CITED.....</b>	<b>12</b>

## LIST OF TABLES

<b>Table 3-1.</b>	Dimensions and Acres of Project Components .....	8
<b>Table 3-2.</b>	Typical Road Requirements on Routes 8G and 9K.....	11
<b>Table 3-3.</b>	Comparison of Helicopter versus No Helicopter Transmission Line Land Disturbance Following Routes 9K and 8G.....	12

## LIST OF FIGURES

<b>Figure 1-1.</b>	Routes 9K and 8G Vicinity and Location Maps.....	2
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## LIST OF APPENDICES

Appendix A	Indicative Layout Map Book
Appendix B	Graphic Examples of Helicopter-Assisted Construction

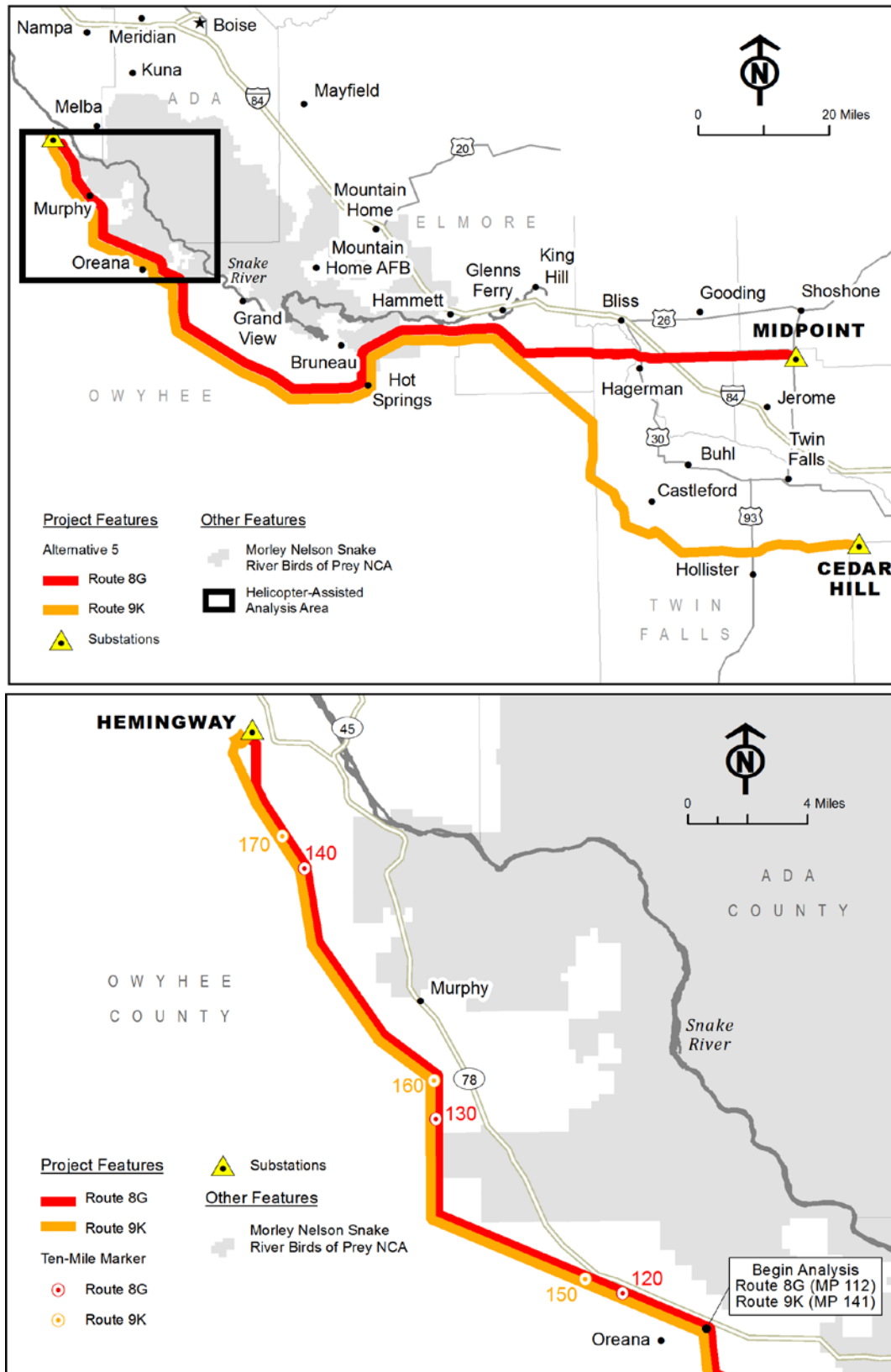
## **ACRONYMS AND ABBREVIATIONS**

BLM	U.S. Department of the Interior, Bureau of Land Management
Companies	PacifiCorp, dba Rocky Mountain Power, and Idaho Power Company (Idaho Power)
FAA	Federal Aviation Administration
Gateway West	Gateway West Transmission Line Project
IPC	Idaho Power Company
kV	kilovolt
OPGW	fiber optic shield ground wire
POD	Plan of Development
Project	Gateway West Transmission Line Project
ROD	Record of Decision
RMP	Rocky Mountain Power
ROW	right-of-way
UTV	utility task vehicle



## **1.0 INTRODUCTION**

On April 12, 2016, PacifiCorp, doing business as Rocky Mountain Power (RMP), and Idaho Power Company (IPC), collectively referred to as the Companies, were requested by the U.S. Department of the Interior, Bureau of Land Management (BLM) to describe helicopter-assisted construction techniques and provide supporting data associated with the portions of Routes 9K and 8G for the Gateway West Transmission Line Project (Project or Gateway West). The purpose of this response is provide specifics of how the Companies would implement helicopter-assisted construction, if mandated and only as an option if no other construction methodology could be employed, for the 33.8 miles of Routes 9K from the Hemingway Substation back to milepost 141 and 34.8 miles of 8G back to milepost 112. The beginning location is approximately 2 miles south of State Highway 78 and 5 miles southeast of Oreana (see Figure 1-1). This response incorporates by reference relevant details found in the August 2013 Plan of Development (POD) (IPC and RMP 2013), issued to support the Project Record of Decision (ROD) for the Project (it will be referred to hereafter as the ROD POD). These routes are part of alternatives identified by BLM and differ from the revised Proposed Routes as described in the August 2014 POD Supplement (IPC and RMP 2014). This response in no way suggests a preference for Routes 9K and 8G by the Companies.



**Figure 1-1. Routes 9K and 8G Vicinity and Location Maps**

## **2.0 HELICOPTER CONSTRUCTION SCENARIOS**

An important aspect in describing helicopter-assisted construction is defining the extent to which motorized vehicles would be involved given the location of the area being evaluated. The following describes two scenarios for helicopter construction and the rationale for selecting the helicopter-assisted approach described in Section 2.2.

### **2.1 Helicopter Support to Conventional Construction**

The ROD POD, Appendix B, Section 3 describes in detail the activities associated with conventional construction including right-of-way (ROW) preparation/clearing, access roads, site preparation, foundation construction, structure erection, wire stringing, and cleanup and site reclamation.

As described in Sections 3.4 and 3.7 of the ROD POD, Appendix B, Project construction activities potentially facilitated by helicopters may include delivery of construction laborers, equipment, and materials to structure sites; structure placement; hardware installation; and wire stringing operations. Helicopters may also be used to support the administration and management of the Project by the Companies. The use of helicopter construction methods to support the conventional construction scenario will not change the length of the access road system required for operating the Project because vehicle access is required to each tower site regardless of the construction method employed. Helicopter operators performing this type of work for electric transmission construction must comply with applicable Federal Aviation Regulations Safety Requirements and Policies of the Federal Aviation Administration (FAA). The FAA has jurisdiction. Specific permits have not historically been required.

#### **2.1.1 Tower Erection**

Use of a helicopter for structure erection may be driven by various factors, including access to the structure locations, construction schedule, and/or construction economics.

When helicopter construction methods are employed, helicopter construction activities are based at a fly yard. The fly yards will be sited at locations to permit a maximum fly time of 4 to 8 minutes to reach structure locations, typically at about 5-mile intervals. Fly yards are used for material storage and erection of structure sections prior to transport to the final structure locations for installation. Additionally, fueling trucks, maintenance trucks, and operations crews are based in the fly yards. Appropriate dust control measures will be implemented at these fly yard locations as well as the locations where helicopters are used along the route.

Prior to installation, each tower structure is assembled in multiple sections at the fly yard. Tower sections or components are assembled by weight based on the lifting capacity of the helicopter in use. The lift capacity of helicopters is dependent on the elevation of the fly yard, the tower site, and the intervening terrain. The heavy lift helicopters that could be used to erect the single-circuit 500-kilovolt (kV) tower sections are rated to lift a maximum of 15,000 to 20,000 pounds per flight. Their capacity is reduced by several factors including elevation, ambient temperature and trip efficiency.

For Gateway West Segments 8G and 9K, a heavy lift helicopter should be capable of lifting maximum loads from 9,000 to 12,000 pounds per flight.

After assembly at the fly yard, the tower sections are attached by cables from the helicopter crane to the top four corners of the structure section and airlifted to the structure location. Upon arrival at the structure location, the section is placed directly on to the foundation or atop the previous structure section. Guide brackets attached on top of each section will assist in aligning the stacked sections. Once aligned correctly, line crews climb the structures to bolt the sections together permanently.

The first step to wire stringing is to install insulators (if not already installed on the structures during ground assembly) and stringing sheaves. Stringing sheaves are pulleys that are temporarily attached to the lower portion of the insulators at each transmission line support structure to allow conductors to be pulled along the line.

### **2.1.2 Stringing**

Once the stringing sheaves and temporary clearance structures are in place, the initial stringing operation commences with the pulling of a lighter weight sock line through the sheaves along the same path the transmission line follows (ROD POD, Section 3.4.8). Typically, the sock line is pulled in via helicopter. The sock line is attached to the hard line, which follows the sock line as it is pulled through the sheaves. The hard line is then attached to the conductor, shield wire, or fiber optic shield ground wire (OPGW) to pull them through the sheaves into their final location. Pulling the lines may be accomplished by attaching them to a specialized wire-stringing vehicle. Following the initial stringing operation, pulling and tensioning the line is required to achieve the correct sagging of the transmission lines between support structures. Equipment at sites required for pulling and tensioning activities includes tractors and trailers with spooled reels that hold the conductors and trucks with the tensioning equipment. To the extent practicable, pulling and tensioning sites are located within the ROW. Depending on topography, minor grading may be required at some sites to create level pads for equipment.

### **2.1.3 Anticipated Helicopter Support to Conventional Construction in Routes 8G and 9K**

Based on the location, terrain, tower designs/weights, and accessibility of Routes 8G and 9K, the Companies estimate that the use of helicopters in the conventional construction scenario would be limited to stringing operations to pull in the lighter weight sock line as previously described. All other construction activities are anticipated to utilize conventional techniques with ground based equipment as described in the ROD POD. The construction contractor, however, has the flexibility to employ helicopters to support construction based on several factors, including accessibility to the structure locations, construction schedule, and/or construction economics. As stated previously, use of helicopter construction methods in the conventional construction scenario will not change the length of the access road system required for operating the Project.

## 2.2 Helicopter-Assisted Construction

BLM requested that a scenario be developed in which the proposed construction and operation for the Project be done strictly by helicopters with absolutely minimized ground support techniques used, which would also include full reclamation of all access roads and temporary work sites in the subject area. Construction of Routes 8G and 9K using helicopter-only construction, while feasible, is exorbitantly expensive (\$2M to \$5M per mile more, depending on the foundation type used, helicopter efficiency and terrain). Helicopter-assisted construction, as described herein, is intended to meet BLM's objective of fully reclaiming all access roads and temporary worksites, minimizing permanent disturbance, while controlling the cost increase associated with construction using helicopters.

The primary differences between helicopter-assisted construction and conventional construction as described in Section 2.1 are as follows:

- The Companies agree to eliminate the long-term disturbance associated with construction of new roads to support ongoing operations and maintenance.
- Temporary roads will be built to support construction.
- All disturbance associated with these roads will be reclaimed at a level sufficient to meet underlying land management objectives.
- Where temporary road construction will result in disturbance that will not likely be sufficiently reclaimed, medium and heavy lift helicopters may be used to eliminate the need for robust access needed for large material and concrete delivery trucks as well as long boom heavy lift cranes.

Helicopter-assisted construction is a hybrid approach between conventional and helicopter-only techniques intended to reduce ground disturbance. This scenario utilizes low-impact vehicles and ground equipment to support the construction of foundations and tower erection.

Foundations are constructed using equipment specifically selected to minimize ground disturbance to the extent practicable. Some lattice tower erection may be completed within the limitations of the lower impact construction equipment. All other construction is supported by helicopters with sufficient lift capacity for the intended operation.

Helicopter-assisted construction can minimize vegetation clearing during construction because the disturbance is generally lessened with low-impact construction vehicles utilizing overland access. However, vegetation clearing required to support safe operation of the transmission line is not changed.

### 2.2.1 Construction Access Roads

Where existing roads are available to access the ROW, work areas, and/or the structure sites, they will be treated as "Existing Roads Requiring Improvement" as described in the ROD POD, Appendix B, Section 2.5. Differences in access road requirements between conventional and helicopter-assisted construction are discussed further as follows.

Where tower sites are not adjacent to existing roads, access for ground-based equipment to each tower site for foundation and tower erection would be achieved by overland travel and temporary access roads. As described in the ROD POD, Appendix B, Section 2.5.1, overland travel means following a staked road alignment, either cutting the vegetation and leaving the root crowns and then driving over it (clear-and-cut) or just driving over the vegetation if it is low enough (drive-and-crush). In either case, a blade may be used if needed to remove obstructions in limited places. Overland travel and temporary access road disturbances will be fully reclaimed in the helicopter-assisted construction scenario.

Overland travel will support low-impact vehicles, which may include, but are not limited to, conventional track-mounted construction vehicles such as drill rigs, track hoes, rubber-tired backhoes, and cranes. Wheeled equipment using oversized, low-pressure tires may be used to minimize impact/rutting by spreading the vehicle weight over a large surface area. Where overland travel cannot support the vehicles and equipment required, temporary access roads will be constructed to each structure site.

Access to fly yards and wire pulling/tensioning sites would require robust construction access roads development due to the equipment utilized. Fly yards will generally be sited adjacent to existing roads where practical to minimize any road construction; otherwise, temporary access roads will be constructed. Pulling/tensioning sites will require temporary access roads during construction to support the stringing equipment.

All temporary access roads and overland access will be reclaimed as described in the approved environmental plan with the mitigation measures prescribed for the given access type and condition.

### **2.2.2 Foundation Construction**

Foundation construction will utilize the conventional ground-based approach where foundations are adjacent to existing roads or sites are accessible by temporary access roads capable of supporting the required construction equipment. Where overland travel or a temporary road to the foundation site is incapable of supporting the required equipment, helicopter-assisted construction techniques will be utilized as described below.

Excavation for drilled shaft concrete piers will be performed using a low-impact drill rig that has sufficient crowd and torque to complete the work. If the disturbance is deemed to be too great for the described drill rig, hand digging of the excavations may be considered. (see Appendix B, Figures B-1 and B-2) If it is determined that drilled shaft concrete pier foundation construction will result in excessive disturbance, alternative foundation types, such as micro-piles or rock anchors, may be considered.

Steel reinforcement cages for foundations will be tied at the site or delivered using a medium lift helicopter. Reinforcement may be set within the foundation excavation by low-impact vehicle or helicopter.

Ready-mix concrete will be dispatched from fixed concrete batch plants, or portable concrete batch plants may be utilized at multi-purpose areas/fly yards to mix concrete prior to dispatch to the foundation construction site. Concrete will be delivered to the

foundation construction site utilizing methods selected to produce the least disturbance considering the level of access available to the site. Delivery methods, listed from most potential for disturbance to least, may include but are not limited to the following:

- Conventional highway-capable concrete truck. Concrete is tailgated into excavation.
- Conventional highway-capable concrete delivery truck transports concrete to a location sufficiently close to the construction site, where a concrete pumping truck pumps the fresh concrete to the delivery location.
- Concrete will be delivered to the multi-purpose area/helicopter fly yard nearest the structure site by conventional highway-capable concrete delivery truck. A 1 or 2 cubic yard bucket transported by medium-lift helicopter delivers concrete to the construction site. (see Figures B-3 and B-4) Multiple helicopters may be utilized for concrete delivery.

### **2.2.3 Tower Erection**

Tower erection will utilize conventional ground based approach where towers are adjacent to existing roads or accessible by a temporary road that supports the needed construction equipment. Where overland travel or a temporary road to structure sites is incapable of supporting the required equipment, helicopter-assisted construction techniques will be utilized as described below.

Structure erection may utilize low-impact vehicles when appropriate. It is expected these low-impact vehicles will have height limitations predicated the use of helicopters to assist structure completion. Low-impact vehicles may be used to erect lattice towers to top of the structure waist. Heavy or medium lift helicopters would then lift the remaining assemblies to complete the structure. (see Figures B-5 and B-6) Where low-impact vehicles cannot be utilized to support the structure erection, assemblies will be temporarily guyed until the structure is self-supporting.

The use of helicopters for tower erection is described in more detail in Section 2.1.1.

### **2.2.4 Stringing**

The use of helicopters for wire stringing is described in Section 2.1.2. In the helicopter-assisted construction scenario, the sock lines will be installed using a small helicopter. (see Figures B-7 through B-9) The sock line facilitates pulling the heavier conductor through the blocks between pulling and tensioning sites. In areas not accessed by temporary roads, crews that have hiked, been transported by all-terrain vehicle (ATV) or utility task vehicle (UTV), or flown in by helicopter will be used to clip and dead-end the conductor section.

## **3.0 HELICOPTER-ASSISTED CONSTRUCTION DETAILS**

### **3.1 Construction Layout**

Appendix A provides mapping for an indicative construction layout for Routes 9K and 8G utilizing helicopter-assisted construction techniques. The indicative layout is a desktop engineering exercise to preliminarily locate multi-purpose yards, fly yards,

access roads, structures, and pulling/tensioning sites. Helicopter equipment used to support construction is described in the ROD POD, Appendix B, Section 3.7.2. Final engineering using survey-grade topographic data and further field reconnaissance will result in changes to the construction layout. The main difference between the conventional and helicopter-assisted construction layouts pertains to the access road system. In the helicopter-assisted construction scenario, there will be no new permanent roads constructed. Existing roads (with and without improvements) will be utilized to the extent practical. All new roads that will be used for construction and operation in the conventional scenario will be temporary in the helicopter-assisted scenario and fully reclaimed. All other work areas, including fly yards, will remain unchanged in location, size, disturbance, and reclamation methods. Table 3-1 shows the dimensions and acres that would be affected during construction and operations for each component of the indicative layout. For existing roads needing improvement, reclamation would be limited to the additional disturbance beyond the existing road width.

**Table 3-1.** Dimensions and Acres of Project Components

Route 9K/8G Project Component	Conventional Construction Buffers		Helicopter-Assisted Buffers	
	Const.	Opns.	Const.	Opns.
Access - Existing Road, Improved (width)	26.2 feet	8 feet	26.2 feet	8 feet <sup>1/</sup>
Access New and Temporary Road (width)	26.2 feet	8 feet	26.2 feet	0 (reclaimed)
Dead-end Pulling - 500-kV (1-SC)	6.89 acres	0 (reclaimed)	6.89 acres	0 (reclaimed)
Fly Yard	12.5 acres	0 (reclaimed)	12.5 acres	0 (reclaimed)
Pad - 500-kV	1.43 acres	0.057 acre	1.43 acres	0.057 acre
Pulling-Tensioning - 500-kV (1-SC)	4.00 acres	0 (reclaimed)	4.00 acres	0 (reclaimed)
Multipurpose Area	20 acres	0 (reclaimed)	20 acres	0 (reclaimed)

1/ BLM may determine that some existing roads should be abandoned. Under that condition, the Companies would reclaim the whole disturbed roadway width.

The construction layout in Appendix A assumes both routes will ultimately be constructed. To minimize disturbance, the access road system utilizes a common shared road for access along both routes with spur roads as needed to structures of each route.

It is anticipated that Segment 9 would be constructed first. Segment 8 would follow at about the same time or years later depending on economic conditions. For the disturbance estimates shown in Table 3-3, one construction event followed immediately by reclamation will occur. No allowance has been made for a second construction or reclamation event if Segment 8 is constructed several years later.

### 3.2 Helicopter Construction Operations

Helicopters will operate from multipurpose areas (Appendix A, Page 7 of 9) and fly yards. Helicopters will fly from these areas to each structure site with multiple trips transporting workers, materials, and equipment. Multiple helicopters and helicopter types will be utilized based on construction activities and production rates required. The flight paths will intersect "important" sage-grouse management areas for travel to a



majority of tower sites in the last approximately 22 miles for Routes 8G and 9K, but should avoid “priority” sage-grouse management areas.

With helicopter-assisted construction, flight times depend on several factors including accessibility, type of low impact vehicles employed by construction contractor, helicopters available and employed by construction contractor, location of fly yards relative to structures, foundation design/type employed, amount of concrete required for foundations, and weight of structures.

**Foundations** – Initial helicopter activities for drilled pier foundation construction requires four to six trips between the fly yard and structure site to deliver concrete forms and four rebar cages, one set for each drilled pier foundation, as well as another four trips to haul out the concrete forms after concrete has hardened. Drilled pier foundations supporting 500-kV single-circuit lattice steel structures typically require 41 to 93 cubic yards of concrete (ROD POD, Appendix B, Table 2.1-2) depending on structure type and underlying soil conditions. The predominant structure type is a tangent lattice tower that typically requires an estimated 41 cubic yard of concrete; a smaller percentage of dead-end towers require much more concrete volume. Where concrete must be delivered with a medium lift helicopter with a 1-2 cubic yard bucket, it would require approximately 40 to 80 trips (10 to 20 trips for each of four foundations) between the fly yard and the structure site. As noted previously, multiple helicopters may be required to complete a concrete pour before concrete sets/hardens. Drilled pier foundations would typically take 2 to 4 days to install with helicopter erection.

**Tower Erection** – Using a combination of medium and heavy lift helicopters requires six to eight trips from the fly yard to the structure site for the predominant tangent lattice tower type. Medium lift helicopters are typically used to set the legs and base of the tower while the heavy lift helicopters will set the main body and upper portions of the tower. Heavier lattice dead-end towers are anticipated to require up to 12 trips to erect. Typically, it is estimated that 4 or 5 towers per day can be erected with continuous helicopter operation. This estimate accounts for the number of lifts, the time needed for ground crews between lifts, helicopter refueling and other items that will impact productivity.

**Wire Stringing** – During wire stringing, sock line pulling would require an estimated 15 to 30 days of continuous flight along the ROW with landings at the fly yards as needed for fueling, maintenance, breaks, etc.

**Workers** – While helicopters are in operation during construction, it is anticipated that the construction contractor will utilize light and medium duty helicopters to ferry workers from fly yards to structure sites and from structure site to structure site. This could require 10 to 20 additional trips per day.

It is estimated that a vast majority of structure locations can be accessed with temporary access roads that can be successfully reclaimed, thereby supporting conventional construction techniques. It is estimated that less than 5 percent of the structure locations will utilize helicopter-assisted construction techniques. In summary, based on the helicopter operations described above, up to 800 trips are estimated between fly

yards and structure sites in the last 34 miles for either Route 8G and 9K (up to 1,600 trips total).

Construction of the approximately 34 miles for either segment is anticipated to take 10 to 12 months total, of which it is estimated 2 to 3 months will require helicopter operations.

The total workforce for helicopter-assisted construction would increase approximately 10 to 15 percent compared to conventional construction due to the additional workers required to support helicopter operations. It is anticipated that the percentage of local workers for the additional work force would be the same in both construction scenarios.

### **3.3 Reclamation**

As described in Section 2.2.1, where tower sites are not adjacent to existing roads, access for ground-based equipment to each tower site for foundation and tower erection would be achieved by overland travel with minimal grading and temporary access roads.

Fly yards and wire pulling/tensioning sites will require robust construction access roads due to the equipment utilized. Fly yards will generally be sited adjacent to existing roads where practical to minimize any road construction; otherwise, temporary access roads will be constructed. Pulling/tensioning sites will require temporary access roads during construction to support the stringing equipment.

Prior to construction and as part of developing the construction POD, the Companies will consult with BLM representatives on the full reclamation goals, methods, and monitoring/success requirements for temporary roads, dead-end pulling and pulling/tensioning sites, multipurpose yards, and fly yards that will be disturbed. Based on site-specific conditions, a full reclamation plan will be prepared prescribing reclamation by milepost for BLM review and approval. The final plan will become a specification of the construction contract.

### **3.4 Operations**

The ROD POD, Appendix B, Section 4.0 describes operations and maintenance for the conventional construction scenario for the Project. This section below describes the differences during operation and maintenance of the line under the helicopter-assisted construction scenario.

Inspection of the entire transmission line system is conducted semi-annually. Aerial inspection is conducted by helicopter semi-annually and requires two or three crew members, including the pilot.

In the conventional construction scenario, detailed ground inspections using four-wheel-drive trucks or ATVs take place annually using access roads to each structure. In the helicopter-assisted construction scenario, a majority of structure sites will not have access roads for ground-based inspections. Structure sites that do not have access roads during operation will require pedestrian inspections. ATV/UTV overland access would be utilized for inspections where available and coordinated with the agency prior to use.

When maintenance activities are required, structures will be accessed in the same fashion as during initial construction of the line using helicopter-assisted construction methods. Temporary roads will be built and/or overland travel utilized to access the structure along the same access path used during initial construction. Helicopters will be used to support maintenance activities as needed.

Elimination of permanent access roads to each structure site that would typically support high reach bucket trucks and other equipment will limit the Companies' ability to utilize live-line maintenance techniques. This may result in extended line outages depending on maintenance required.

Vegetation clearing required to support safe operation of the transmission line, as described in the ROD POD, Appendix B, Section 4.1.5, will not change.

### 3.5 Disturbance Calculations

For Routes 8G and 9K, the Companies have agreed to minimize construction disturbance and eliminate the long-term disturbance associated with new permanent access roads for operations and maintenance. For Routes 8G and 9K, all construction ground access will be considered temporary. Existing roads requiring improvement will be returned to preconstruction widths. Emergency ground access may be required to facilitate reclamation.

During Project operation, the Companies would conduct annual inspections for portions of the line without ground access utilizing specialized aerial and pedestrian patrols. Emergency repair and maintenance activities are expected to be infrequent. When access is required, it will be constructed along the same routes used during construction. In those cases, the Companies will complete the repairs and coordinate with BLM on reclamation requirements.

Table 3-2 summarizes the four types of roads needed for accessing the transmission line structures for the Project.

**Table 3-2.** Typical Road Requirements on Routes 8G and 9K

Road Type	Conventional Construction		Helicopter Construction with Reclaimed Ground Disturbance	
	Access Roads for Construction	Access Roads for Routine Operations	Access Roads for Construction	Access Roads for Routine Operations
Existing roads requiring no improvement	No change	No change	No change	No change
Existing roads requiring improvement	Unsurfaced 14-foot-wide straight sections of road and 16- to 20-foot-wide sections at corners	For routine activities, an 8-foot portion of the road will be used and vehicles will drive over the vegetation ("two-track").	Unsurfaced 14-foot-wide straight sections of road and 16- to 20-foot-wide sections at corners	For routine activities, an 8-foot portion of the road will be used and vehicles will drive over the vegetation ("two-track").
New roads	Unsurfaced 14-foot-wide straight sections of road and 16- to 20-foot-wide sections at corners	For routine activities, an 8-foot portion of the road will be used and vehicles will drive over the vegetation ("two-track").	None	None.

		track").		
Temporary roads	Unsurfaced 14-foot-wide straight sections of road and 16- to 20-foot-wide sections at corners	None—contours will be restored, and the road will be ripped and seeded.	Unsurfaced 14-foot-wide straight sections of road and 16- to 20-foot-wide sections at corners	None—contours will be restored, and the road will be ripped and seeded.

Table 3-3 provides a summary of construction and operations disturbance for the conventional and helicopter-assisted construction scenarios.

**Table 3-3.** Comparison of Helicopter versus No Helicopter Transmission Line Land Disturbance Following Routes 9K and 8G

Route 9K/8G Project Component	Conventional Construction (acres) <sup>1/</sup>		Helicopter-Assisted Construction (acres) <sup>2/</sup>	
	Const.	Opns.	Const.	Opns.
Access - Existing Road, Improved	166.3	52.5 <sup>3/</sup>	166.3	52.5 <sup>3/,4/</sup>
Access New Road	73.8	31.5	73.8	—
Dead-end Pulling - 500-kV (1-SC)	165.1	—	165.1	—
Fly Yard	62.4	—	62.4	—
Pad - 500-kV	420.6	16.7	420.6	16.7
Pulling-Tensioning - 500-kV (1-SC)	74.0	—	74.0	—
Regeneration Site	—	—	—	—
Multipurpose Area	20.0	—	20.0	—
<b>Total</b>	<b>982.2</b>	<b>100.7</b>	<b>982.2</b>	<b>69.2</b>

1/ See Section 2.1

2/ See Section 2.2

3/ Consistent with the NEPA analysis, the existing road would likely be improved over its previous existing condition and therefore still represents operational disturbance.

4/ Makes the same assumption as Note 3. BLM may determine that some existing roads should be abandoned. Under that condition, the Companies would reclaim the whole disturbed roadway width.

## 4.0 LITERATURE CITED

IPC and RMP (Idaho Power Company and Rocky Mountain Power). 2013. Gateway West Transmission Line Project Plan of Development. August.

IPC and RMP. 2014. Gateway West Transmission Line Plan of Development Supplement. August.

**APPENDIX A**  
**Indicative Layout Map Book**

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## **APPENDIX B**

### **Graphic Examples of Helicopter-Assisted Construction**

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Figure B-1 Hand Digging



Figure B-2 Completed Hand Dig



Figure B-3 Concrete Flight



Figure B-4 Concrete Landing





Figure B-5 Body Lift



Figure B-6 Bridge Lift



Figure B-7 Pulling Sock



FigureB-8 Needle



Figure B-9 Threading the Needle

**Appendix C**  
**Proponents' Draft Mitigation and Enhancement Portfolio**

# **Morley Nelson Snake River Birds of Prey National Conservation Area**

## **DRAFT Mitigation and Enhancement Portfolio Proposal**

### **Gateway West Transmission Line Project**

*Prepared by:*



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August 2014

## TABLE OF CONTENTS

<b>1.0 INTRODUCTION.....</b>	<b>1</b>
1.1 Gateway West Transmission Line Project Description .....	1
1.2 Gateway West and BOPNCA .....	2
1.3 Purpose of Mitigation and Enhancement Portfolio .....	6
1.4 Structure of Mitigation and Enhancement Portfolio .....	6
<b>2.0 BOPNCA REGULATORY BACKGROUND .....</b>	<b>7</b>
2.1 Enabling Legislation .....	7
2.2 Resource Management Plan .....	7
2.3 NLCS Management Strategy and Manuals (BLM 6100).....	8
2.4 Consistency with Enabling Legislation and RMP .....	9
<b>3.0 SITING AND ROUTING CONSIDERATIONS FOR SEGMENTS 8 AND 9.....</b>	<b>11</b>
3.1 Existing Transmission Lines across BOPNCA.....	11
3.2 National Energy Corridor Designation .....	11
3.3 Summary of Companies' Consensus-Building Siting Work .....	13
3.4 History of Formal Proposed Actions and BLM Preferred Alternatives .....	18
3.4.1 Rationale for crossing the BOPNCA .....	18
3.4.2 Project Siting History.....	19
3.4.3 BLM Preferred Alternatives .....	23
<b>4.0 IMPACT OF THE PROJECT ON BOPNCA .....</b>	<b>25</b>
4.1 Cultural Resources.....	26
4.2 Vegetation Resources.....	26
4.2.1 General Vegetation .....	26
4.2.2 Invasive Plant Species .....	28
4.2.3 Wetlands .....	28
4.2.4 Special Status Plant Species .....	29
4.3 Wildlife Resources .....	30
4.3.1 General Wildlife.....	30
4.3.2 Raptor Impacts.....	30
<b>5.0 PROPOSED COMPENSATORY MITIGATION AND ENHANCEMENT APPROACH.....</b>	<b>34</b>
5.1 Avoidance and Minimization through Routing and Environmental Protection Measures .....	35
5.2 Reclamation and Project-Wide Compensatory Mitigation.....	35
5.3 Restoration and BOPNCA Mitigation Goals.....	36
5.4 Enhancement Ratios.....	37
<b>6.0 ENHANCEMENT PORTFOLIO PROPOSAL .....</b>	<b>39</b>
6.1 Project Types .....	39
6.1.1 Habitat Restoration .....	40
6.1.2 Property Purchase .....	41
6.1.3 Law Enforcement.....	42
6.1.4 Visitor Enhancement.....	43
6.1.5 Line and Substation Removal .....	43
6.2 Portfolio Fund.....	47

6.2.1	Management Fund.....	47
6.2.2	Basis for Funding.....	47
6.2.3	Oversight Committee .....	49
6.3	Monitoring and Reporting.....	51
6.3.1	Monitoring and Reporting for Project-wide Mitigation .....	51
6.3.2	Monitoring and Reporting for Line and Substation Removal .....	51
6.3.3	Monitoring and Reporting for BOPNCA-Required Additional Mitigation and Enhancement .....	51
<b>7.0</b>	<b>LITERATURE CITED.....</b>	<b>52</b>

## LIST OF TABLES

<b>Table 1.</b>	Typical Construction and Operation Footprints for Project Elements .....	2
<b>Table 2.</b>	Distances of Alternative Routes across BOPNCA on BLM- Managed Lands .....	4
<b>Table 3.</b>	RMP Amendments Needed by Route .....	10
<b>Table 4.</b>	Companies' Siting and Routing Meetings .....	15
<b>Table 5</b>	Acres of Construction-Related Project Disturbance within BOPNCA on BLM-Managed Lands .....	25
<b>Table 6.</b>	Acres of Operation-Related Disturbances within BOPNCA on BLM-Managed Lands.....	25
<b>Table 7.</b>	Ecological Sites Mapped for Proposed Segment 8 and Segment 9 in the BOPNCA .....	28
<b>Table 8.</b>	Estimated Construction Impact (acres) on Proposed Critical and Potential Habitat for Slickspot Peppergrass on Federal Lands, BOPNCA.....	29
<b>Table 9.</b>	MEP Fund Value for Proposed Routes for Segments 8 and 9 .....	49
<b>Table 10.</b>	MEP Fund Value for BLM-Preferred Routes for Segments 8 and 9 .....	49

## LIST OF FIGURES

<b>Figure 1.</b>	Land Status.....	5
<b>Figure 2.</b>	Topography and Existing Facilities .....	12
<b>Figure 3.</b>	Proposed Swan Falls to Bowmont Transmission Line Modifications .....	45
<b>Figure 4.</b>	Proposed Mountain Home to Bennet Transmission Line Modifications .....	46



## **LIST OF APPENDICES**

**Appendix A** – Applicability of environmental protection plans and measures to the BOPNCA

**Appendix B** – Detailed Calculation Spreadsheet for MEP Value

## ACRONYMS AND ABBREVIATIONS

BLM	Bureau of Land Management
BMP	Best Management Practices
BOPNCA	Morley Nelson Snake River Birds of Prey National Conservation Area
CIC	compliance inspection contractor
Committee	Oversight Committee
Companies	Rocky Mountain Power and Idaho Power Company
EIS	Environmental Impact Statement
EPM	Environmental Protection Measure
FLPMA	Federal Land Policy and Management Act
FTE	full-time equivalent
Gateway West	Gateway West Transmission Line Project
HPTP	Historic Properties Treatment Plan
IDANG	Idaho Army National Guard
IPC	Idaho Power Company
kV	kilovolt
NCA	National Conservation Area
NHT	National Historic Trail
NLCS	National Landscape Conservation System
NMA	Non-Motorized Area
NRCS	Natural Resources Conservation Service
NTP	Notice to Proceed
OCTC	Orchard Combat Training Center
POD	Plan of Development (Bureau of Land Management)
PPH	preliminary priority habitat
PP&L	Pacific Power and Light Company (now PacifiCorp)
Project	Gateway West Transmission Line Project
RAC	Resource Advisory Council (Boise District)
RMP	Resource Management Plan
ROD	Record of Decision
ROW	right-of-way
SF299	Standard Form 299
SR	State Route
SRBOP	Snake River Birds of Prey National Conservation Area
SRMA	Special Recreation Management Area
USFWS	U.S. Fish and Wildlife Service
VRM	Visual Resource Management
WVEC	West-wide Energy Corridor

## 1.0 INTRODUCTION

This Draft Mitigation and Enhancement Portfolio Proposal (Draft MEP) from PacifiCorp, doing business as Rocky Mountain Power, and Idaho Power Company (Companies), is intended to offer sufficient mitigation and enhancement for the resources and values for which the Morley Nelson Snake River Birds of Prey National Conservation Area (BOPNCA or SRBOP or NCA) was designated to allow the Bureau of Land Management (BLM) to complete its decision process for Segments 8 and 9 of the Gateway West Transmission Line Project and issue a Record of Decision (ROD) for these segments.

### 1.1 Gateway West Transmission Line Project Description

The Companies, are proposing to construct and operate the Gateway West Transmission Line Project (Gateway West or Project) consisting of approximately 990 miles of new 230-kilovolt (kV), 345-kV, and 500-kV alternating current electric transmission system consisting of 10 segments between the Windstar Substation at Glenrock, Wyoming, and the Hemingway Substation approximately 30 miles southwest of Boise, Idaho. The proposed transmission line is needed to supplement existing transmission lines in order to relieve operating limitations, increase capacity, and improve reliability in the existing electric transmission grid, allowing for the delivery of up to 1,500 megawatts of additional energy for the Companies' larger service areas and to other interconnected systems.

The Project includes ground-disturbing activities associated with the construction, operation, and maintenance of aboveground, single-circuit transmission lines involving towers, access roads, multi-purpose areas, fly yards, pulling sites, substations, communication sites, and electrical supply distribution lines. The Project crosses private land and public lands administered by the BLM, U.S. Department of Agriculture Forest Service, Bureau of Reclamation, and the states of Idaho and Wyoming, including the BOPNCA.

The compensatory mitigation and enhancement proposed within this Draft MEP is based upon the Project "footprint" or disturbance footprint and line mileage within the BOPNCA on federal lands. The Project "footprint" was developed based on standard construction and operation practices and is defined as follows:

1. "Construction footprint" includes all the areas that may be disturbed during construction, including the full width of access roads including cuts and fills where needed, construction spaces at each structure, etc. The majority of this footprint will be reclaimed (see Appendix B, Plan of Development, for the ROD, which includes the Reclamation Plan, among many other environmental protection plans and includes a detailed description of disturbance in its Appendix B).
2. "Operation footprint" of the Project includes those areas permanently occupied by Project facilities, including the reduced travelway of permanent roads and the footprint occupied by the structures, regeneration stations, and substations.

Table 1, below, shows typical construction and operation footprints for various Project elements. Note that these values were used to estimate disturbance by developing a geodatabase layer using the proposed facility locations and then overlaying that “footprint” database, whether for construction or operation footprint, with the relevant vegetation or land ownership geodatabase layer.

**Table 1.** Typical Construction and Operation Footprints for Project Elements

Element	Construction Footprint	Operation Footprint
500-kV Lattice Structure and 138-kV/500-kV double-circuit structure	250' x 250' or 2.43 acres	50' x 50' or 0.06 acre; remainder revegetated but not recontoured
Regeneration Station	1 acre	0.5 acre; remainder reclaimed
Access Roads	Length times average 26' wide	Length times average 8' wide; remaining width reclaimed
500-kV in-line pulling and tensioning site	250' x 700' or 4.02 acres	Fully reclaimed
500-kV angle structure pulling and tensioning site	2 @ 250' x 600' or 6.89 acres	Fully reclaimed
Fly Yards (if used)	12.5 acres	Fully reclaimed
Multi-purpose yards	20 acres	Fully reclaimed

Because all the temporary facilities, most of the structure workspaces, and most of the access road construction disturbance will be reclaimed, the operation footprint is much smaller than the construction footprint. For example, for the Companies' proposed routes for both Segments 8 and 9, the long-term project occupancy within BOPNCA on BLM lands is only 97 acres, but the construction footprint within BOPNCA on BLM lands is 1,267 acres.

## 1.2 Gateway West and BOPNCA

The BLM released the final environmental impact statement (Final EIS) on April 26, 2013, which identified alternative routes for Segments 8 and 9 in and near the BOPNCA in southwestern Idaho (BLM 2013a). The BOPNCA was designated by Congress in 1993 and became part of the National Landscape Conservation System (NLCS) in 2000, which was formally established by Public Law 111-11 in 2009. The BLM preferred alternatives for Segments 8 and 9 avoided the BOPNCA, based on guidelines in manuals developed in 2012 pursuant to Public Law 111-11. However, the BLM-preferred routes had potential impacts on the greater sage-grouse (*Centrocercus urophasianus*), scenic resources in Owyhee County, local communities, and private landowners. The Final EIS described the BLM preferred alternatives and the Companies' proposed routes.

The BLM preferred alternatives, as specified in the Final EIS, were that Segment 8 (described herein as starting at the Midpoint Substation and moving to the west) be constructed along the Proposed Route for the first 92 miles, then constructed through largely private land along Alternative 8B, avoiding most of the crossing of the BOPNCA to arrive at the Hemingway Substation 40 miles later and that Segment 9 (described herein as starting at the Cedar Hill Substation and moving to the west) be built using the Final EIS Proposed Route for the first 95 miles, then use Alternative 9E and some modifications to the Final EIS Proposed Route to arrive at the Hemingway Substation about 76 miles later.

In the Final EIS the Companies proposed to construct Segment 8 from the existing Midpoint Substation near Shoshone, Idaho about 131 miles to the existing Hemingway Substation near Melba, Idaho. The BLM advised that the Proposed Segment 8 crossing of the Halverson Non-Motorized Area could not be permitted at all and the Idaho Army National Guard (IDANG) expressed reservations regarding the crossing of the Alpha Maneuver Sector. The Companies also originally proposed to construct Segment 9 about 162 miles from the proposed Cedar Hill Substation southeast of Twin Falls, Idaho, to the existing Hemingway Substation. During the siting and routing discussions and meetings with the various task forces formed by local landowners, governments, and the local BLM (see Section 3.3), additional alternatives for Segment 9 were considered. The Owyhee County task force proposed Alternative 9D, which parallels an existing line within the BOPNCA, and the BLM, in response to concerns raised by that proposal, proposed Alternative 9G.

The Companies, considering the feedback from the BLM and public modified the Final EIS Proposed Route. The route modifications were not formally submitted to the BLM; rather the Companies submitted the route modifications in conjunction with a previous version of the Draft MEP as a comment to the Final EIS during the public comment period. The Companies modified the Final EIS Proposed Route for Segment 8, including Alternatives 8D and 8E, which were proposed to avoid the Alpha Sector and the problematic crossing of the Snake River and the Halverson NMA, respectively. The Companies modified Segment 9 through the inclusion of Alternative 9G.

The ROD, issued by the BLM in November 2013, deferred the decision to grant rights-of-way (ROW) on federal lands for Segments 8 and 9 because the principal siting issue involves a requirement in the enabling legislation (Public Law 103-64) that the BOPNCA be managed “to provide for the conservation, protection and enhancement of raptor populations and habitats and the natural and environmental resources and values associated therewith, and of the scientific, cultural, and educational resources and values of the public lands in the conservation area” (BLM 2013b).

The intent of deferring the decision was to provide “additional time for federal, state, and local permitting agencies to pursue a consensus regarding siting routes in these segments” (BLM 2013b). In addition, the ROD stated that “the BLM needs more time to evaluate and refine” the Draft MEP prepared by the Companies “to ensure that it is sufficient” to meet the enhancement requirement of the enabling legislation.

In November 2013, BLM established the Boise District Resource Advisory Council (RAC) Subcommittee to examine options for resolving siting issues associated with Segments 8 and 9 of the Project and evaluate the Draft MEP submitted by the Companies. The RAC Subcommittee evaluated the Companies’ Proposed Routes as modified by Alternatives 8D, 8E, and 9G and identified and evaluated several other routing options. In May 2014, the RAC Subcommittee issued its recommendations in two reports: the first report addressed routing options in or near the BOPNCA (Boise RAC Subcommittee 2014a) and the second concerned the revised Draft MEP submitted by the Companies to the RAC Subcommittee in March 2014 (Boise RAC Subcommittee 2014b). The RAC Subcommittee recommendations were adopted by the Boise District RAC and forwarded on to BLM for action.

The development and evaluation of route options by the RAC Subcommittee considered a wealth of local knowledge and included the participation of members of the public, local and state

officials, and federal agencies (local and national-level). The Companies support the RAC Subcommittee recommended route options and have adopted these route options as the Companies current Proposed Routes as reflected in the August 2014 Standard Form 299 (SF299) revision and within this Draft MEP. The Companies have also incorporated some of the RAC Subcommittee recommendations for compensatory mitigation and enhancement within this Draft MEP.

Table 2, below, shows the numbers of miles of the BOPNCA (on BLM-managed lands) crossed by the Companies' current Proposed and the Final EIS BLM-Preferred alignments for Segments 8 and 9.

**Table 2.** Distances of Alternative Routes across BOPNCA on BLM-Managed Lands

Segment	Route	Miles	
		Total Length <sup>1/</sup>	Distance across BOPNCA (BLM and BOR)
8	BLM Preferred	132	2.0
	Proposed Route	129.4	17.9
9	BLM Preferred	171.4	11.2
	Proposed Route	161.4	46.0

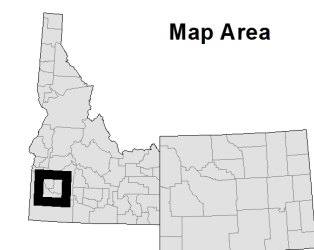
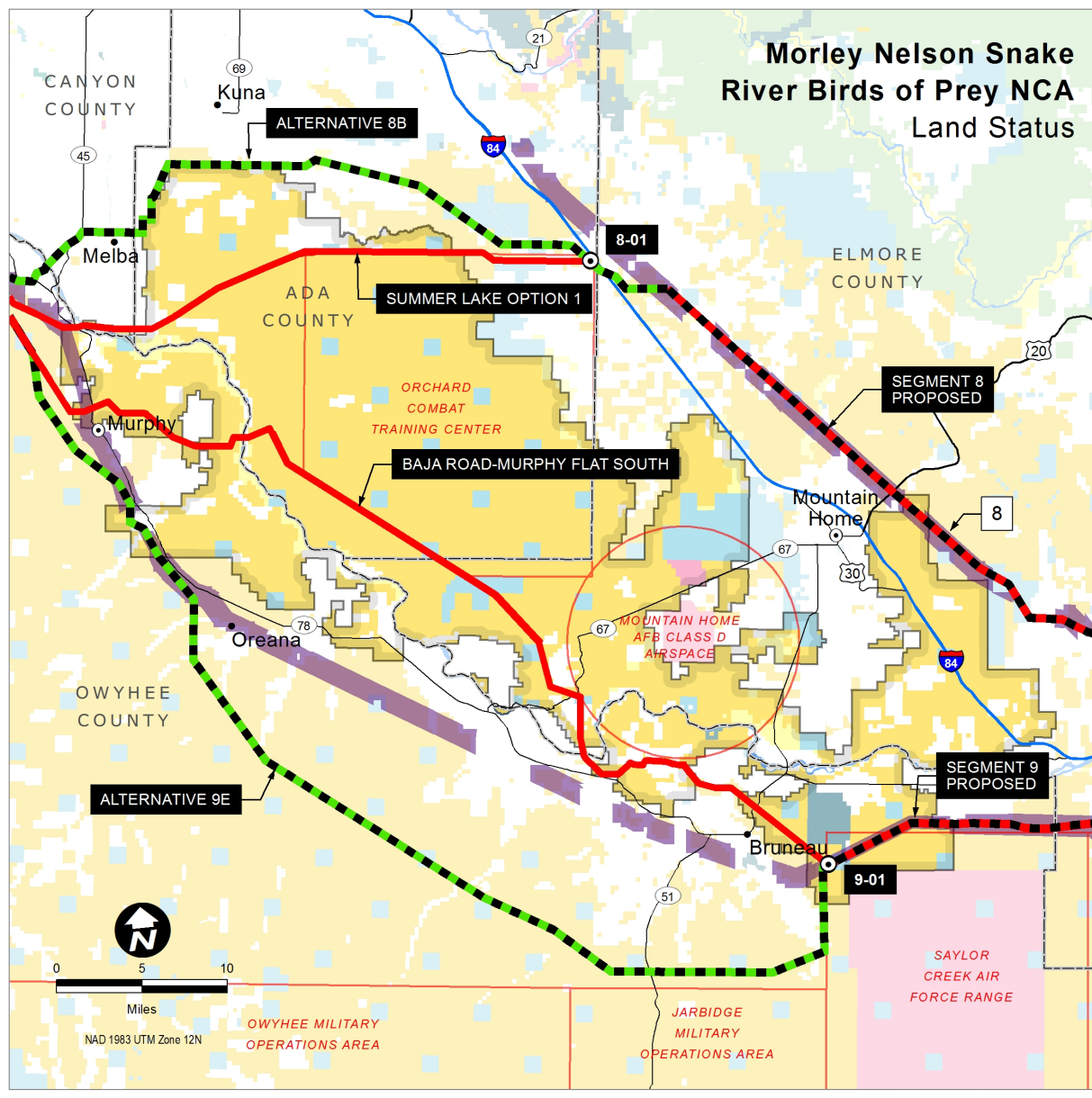
<sup>1/</sup> Total length from Substation to Substation

Figure 1 shows the Proposed Routes for Segments 8 and 9 in red, which are consistent with the RAC Subcommittee recommended route options and the BLM's Final EIS Preferred Alternative as a black striped overlay on either red or green routes, as appropriate.

Although the ROD states that the Project's environmental protection measures would "conserve and protect NCA resources," BLM staff has emphasized that mitigation must bring the area back to baseline, which BLM staff has stated is above and beyond "conserve and protect NCA resources." Therefore, the Companies have included a compensatory mitigation component based on the long-term operational footprint of the Project to restore to the pre-construction or baseline at a minimum. The compensatory mitigation is beyond the standard mitigation or Project design features (presented in the BLM Plan of Development [POD] as environmental protection measures) that will be implemented and will offset residual effects. The Companies have further proposed an enhancement component to meet the enhancement requirement in the enabling legislation for the BOPNCA.

The Companies have provided a MEP that is scaled, where feasible, to the acres of direct impact on the NCA and allows for its consideration and approval *regardless of the alternative finally selected*. It is the Companies' intention to provide compensatory mitigation and enhancement in proportion to the impacts to the BOPNCA for any route that is approved, and to use the acres of construction disturbance as a surrogate to estimate proportional impacts.

For example, the routes selected as Preferred by the BLM in the Final EIS would disturb 351 acres during construction, as compared to 1,267 acres for the Companies' Proposed Route. If the BLM's Preferred Alternatives were selected, the funding within the Draft MEP would be scaled back to about 20 percent of the proposed funding for the Companies' Proposed Route.



Sources: Idaho Power, BLM, ESRI

**Project Features**

- Proposed Routes
- Proposed Route (BLM Preferred Alternative)
- Feasible Alternative (BLM Preferred Alternative)
- Route Reference Node

**Land Status**

- Bureau of Land Management
- National Forest

- Fish and Wildlife Service
- Bureau of Reclamation
- Military Reservation/Corps of Engineers
- State
- State Wildlife, Park, Recreation or Other
- Private
- Water

- West-wide Energy Corridor (WWEC)/1

**Other Features**

- County
- Snake River Birds of Prey NCA Boundary
- Military Operating Area

SRBOP Land Status Scott Flinders 8/1/2014

/1 width of WWEC exaggerated slightly at this scale for cartographic purposes

**Figure 1. Land Status**

### 1.3 Purpose of Mitigation and Enhancement Portfolio

The Companies present substantial evidence in Section 4.3, below, that transmission lines are a benefit, not a detriment, to raptor populations. The lattice structures provide additional nesting, perching, and roosting substrates and the transmission lines do not pose a substantive risk to the raptors. The access roads used for construction and operation of the transmission line can serve as firebreaks and access for firefighting. Limiting the area burned and the number of times an area burns can help limit the adverse impacts of cheatgrass that so often invades after a fire. Therefore, the Project would have no adverse impacts on the values for which BOPNCA was designated and would enhance the BOPNCA in important ways. The BLM does not agree with the Companies and has asserted in its Final EIS that any enhancement provided by the Project is outweighed by other environmental impacts. In the spirit of cooperation and in the interest of receiving a ROW grant from the BLM for Segments 8 and 9, the Companies propose this Draft MEP so that the BLM can find that this Project meets its stated “enhancement requirement” for the BOPNCA and permit construction of both Segment 8 and Segment 9 within its boundaries.

The Companies present this Draft MEP to the BLM to make a clear and public commitment to provide sufficient compensatory mitigation to fully offset impacts to resources within the BOPNCA as well as providing sufficient enhancement opportunities for the BOPNCA to allow the BLM to approve a complete route for Segment 8 and a complete route for Segment 9 in its ROD regarding the Project. The Companies would prefer that the Proposed Route for Segment 8 and the Proposed Route for Segment 9 be approved, which are the RAC Subcommittee recommended route options and reflect the input and consideration of state and local governments, the public, the local and national BLM representatives, and the Companies.

### 1.4 Structure of Mitigation and Enhancement Portfolio

This Draft MEP presents:

1. A summary of the enabling legislation and subsequently published regulation, plan, and policy regarding BOPNCA, and a discussion of the consistency of the Project with the values for which the BOPNCA was designated (Section 2);
2. Important aspects of siting and routing decisions for the Proposed, Alternative, and BLM Preferred routes for Segments 8 and 9 (Section 3);
3. A brief analysis of the impacts of the alternative routes across BOPNCA considered by the Companies or by the BLM as reasonable and feasible routes, summarized from the Final EIS (Section 4);
4. The Companies’ approach to determining the needed level of compensatory mitigation and enhancement to allow for the approval of both Segments 8 and 9, using the level of disturbance as a metric that can be applied regardless of the route considered (Section 5);
5. Types of mitigation and enhancement projects and their effectiveness (Section 6.1);
6. How the MEP will be funded and managed, which may include a third party for receiving the funds, together with an Oversight Committee to provide oversight of fund receipt, management, disbursement, and effectiveness (Section 6.2); and
7. A monitoring and reporting program to allow for transparent disclosure of the use and effectiveness of the enhancement projects (Section 6.3).



## **2.0 BOPNCA REGULATORY BACKGROUND**

### **2.1 Enabling Legislation**

The Enabling Legislation for BOPNCA, Public Law 103-64, established the BOPNCA in 1993 for the "...conservation, protection and enhancement of raptor populations and habitats and the natural and environmental resources and values associated therewith, and of the scientific, cultural, and educational resources and values...." Section 2(4) of the Act defines the term "raptor habitat" to include the habitat of the raptor prey base as well as the nesting and hunting habitat of raptors within the conservation area.

Section 1((5)(D) states, "Protection of the conservation area as a home for raptors can best and should be accomplished by the Secretary of the Interior, acting through the Bureau of Land Management, under a management plan that: (...) (D) allows for diverse appropriate uses of lands in the area to the extent consistent with the maintenance and enhancement of raptor populations and habitats and protection and sound management of other resources and values of the area."

Section 2(4) defines the term "raptor habitat" to include the habitat of the raptor prey base as well as the nesting and hunting habitat of raptors within the BOPNCA.

Section 2002 of Public Law 111-11—Mar. 30, 2009, established the National Landscape Conservation System (NLCS) within the BLM and automatically made BOPNCA, among other National Conservation Areas and other special areas, part of the NLCS. Public Law 111-11 specifically mandated the NLCS to uphold the enabling legislation for each of the components of the NLCS. Section 2301 added "Morley Nelson" to the NCA's title to recognize the contribution of that individual.

### **2.2 Resource Management Plan**

In 2008, the RMP for the BOPNCA was finalized and announced. The RMP states,

"The SRBOP contains approximately 483,700 acres of public land in the Idaho counties of Ada, Canyon, Elmore and Owyhee. The NCA includes the 138,000-acre Orchard Combat Training Center (OCTC), used by the Idaho Army National Guard for military training since 1953. Within its boundary are approximately 41,200 State acres, 4,800 private acres, 1,600 military acres, and 9,300 acres covered by water; however, these lands were not affected by the SRBOP designation and are not affected by SRBOP RMP decisions. The SRBOP is managed by BLM under the concept of dominant use rather than multiple use. This means that prior to authorizing uses, BLM determines the compatibility of those uses with the purposes for which the NCA was established."

Section 2.17 of the RMP states "Major utilities will be restricted to the two corridors identified (Lands Map 3). Potential developments within these corridors would be compatible with the purposes for which the NCA was established". Furthermore the RMP specifies, in Section 2.17 in the "Utility and Communication Corridor Objectives and Management Actions" table that the objective of this element is: "ROW authorizations for utility developments will be compatible with the purposes for which the NCA was established, emphasizing habitat protection with economic development." Lands Map 3 of the RMP specifies the two utility corridors to which all future utility development would be restricted. The RMP recognizes that utility corridors

meet the “economic development” component of the overall BLM mission and explicitly acknowledges that these corridors will be managed separately from the overall NCA, where habitat protection is the only goal. Note that these corridors also are part of the National Energy Corridors as required in the Energy Policy Act of 2005 and were explicitly designated for utilities. Furthermore, Page 2-26 of the RMP states that land use authorizations “will enhance or at least not adversely affect raptor populations or their habitat.” As presented in the following sections, notably sections 2.4 and 4.3, the Project does not adversely affect raptor populations or their habitat and the Project itself provides and/or enhances opportunities for nesting, perching and roosting of raptor species and other birds of prey.

### 2.3 NLCS Management Strategy and Manuals (BLM 6100)

In October of 2011, the BLM completed the *National Landscape Conservation System 15-Year Strategy 2010-2025* to provide national-level guidance for managing the BLM’s National Conservation Lands. The national strategy is organized around 4 major themes:

- Ensuring the conservation, protection, and restoration of NLCS values;
- Collaboratively managing the NLCS as part of the larger landscape;
- Raising awareness of the value and benefits of the BLM’s NLCS; and
- Building upon BLM’s commitment of conservation.

Each of the BLM State Offices in turn were asked to prepare a three-year strategy organized around and tiered to the same four themes outlined in the national strategy; the Idaho State Office has prepared a state strategy for 2012–2015 (*Idaho National Landscape Conservation System Strategy 2012–2015* (BLM no date). In July 2012, the NLCS issued several management manuals. The strategies and manuals were released well after the completion of route development for this Project.

The national and state strategy, as well as Manual 6100, allow for multiple uses that are consistent and/or compatible with the designating legislation. However, Manual 6100, Section 1.6(J)(4) Lands and Realty, also states,

“To the greatest extent possible, subject to applicable law, the BLM should through land use planning and project-level processes and decisions, avoid granting new ROWs through NLCS units ...Subject to applicable law, the BLM shall exercise its discretion to deny ROW applications in NLCS units if the BLM determines the ROW proposals are:

- a. inconsistent with the authority that designated the unit; or
- b. incompatible with the protection of the values for which the unit was designated, subject to a compatibility determination by the authorized officer for the affected NLCS unit.”

BLM Manual 6220 specifically addresses managing NCAs. This manual allows for uses that are compatible with the “...protection of the objects and values for which those areas were designated.” (Section C.1). However, the manual also appears to make the assumption that rights-of-way are not compatible. Section E.1.e states “...to the greatest extent possible, subject to applicable law, through land use planning and project-level processes and decisions, the BLM should avoid sitting ROWs in Monuments and NCAs.” Manual 6220 Section E.5 states “If new

ROWs are authorized in Monuments and NCAs, consistent with 43 CFR Parts 2800 and 2880 and to the greatest extent possible:

- a. the ROW must share, parallel, or adjoin existing ROWs;
- b. the effects of the projects from the grants of the ROW must be mitigated; and
- c. the ROW should include a stipulation that boundaries will be marked to federal boundary standards.”

When considering the national and state strategy and BLM manuals, it is clear that the BLM has contemplated the issuance of ROWs within the NCA as the BLM has established a process for doing so and criteria or requirements for managing the NLCS unit in this regard. Therefore authorizing ROWs for the Project within the NCA is allowable, and when factoring in the use of a designated utility corridor (see Section 3.2) and this MEP, the spirit and requirements of managing a NLCS unit are met and satisfied.

## **2.4 Consistency with Enabling Legislation and RMP**

The enabling legislation allows for “diverse appropriate uses of lands in the area to the extent consistent with the maintenance and enhancement of raptor populations and habitats and protection and sound management of other resources and values of the area.” The Companies believe that any of the proposed alignments considered for the purposes of this Draft MEP are consistent with the enabling legislation. The Companies believe that transmission lines crossing the BOPNCA do not impair the values for which the BOPNCA was established because:

1. Lattice structures are, in and of themselves, no hazard to raptors;
2. Lattice structures provide substantial perching, roosting, and nesting opportunities for many species of raptors and other birds of prey; and
3. 500-kV conductors are 1.5 inches in diameter and are bundled in a triangular configuration with spacing of 18 and 25 inches. The three conductor bundles are at least 39 feet apart from each other in the delta lattice tower configuration. There is negligible risk of collision with such large structures. There is no danger of electrocution as no raptor has a wingspan sufficient to touch two phases at once.

The Project conducted a rigorous routing and siting analysis “to develop proposed transmission corridors/routes and substation sites meeting the requirements of the Project purpose and need, minimizing or avoiding significant environment effects and meeting Project engineering and construction requirements” (IPC and RMP 2008). As such the routes developed through this analysis balanced the many contributing constraints, including potential impacts to raptors with routing and siting opportunities. Similarly, the analysis presented in the Final EIS considered the many constraints and opportunities, including those expressed and those which continue to be voiced during public involvement and comment on the Project, in order to balance potential impacts to all resources and the public. BLM must consider the “multiple-use mandate” and concept presented in the Federal Land Policy and Management Act (FLPMA) of 1976 for the overall Project, but must also respect the “dominant use” requirements of the enabling legislation and subsequent BLM regulation and policy.

No plan amendments are needed for the BLM’s Preferred Routes for Segment 8. The BLM, in the Final EIS, stated that a single plan amendment would be required to permit the BLM-

Preferred Route for Segment 9 because it does not entirely lie within a designated utility corridor.

Table 3, below, lists the Companies' assessment of plan amendments required to permit the Proposed Routes.

The Proposed Route for Segment 8 requires amendments to allow construction outside the designated utility corridors and for surface disturbance within 0.5 mile of or within slickspot peppergrass habitat. For a detailed description of Proposed Segment 8, see Section 3.4.2.

The Proposed Route for Segment 9 requires amendments to allow construction outside the designated utility corridors, to cross the Cove NMA area in new double-circuit configuration along existing 138-kV alignment, for crossing the Snake River and C. J. Strike Special Recreation and Management Areas (SRMAs) and for visual impacts associated with the Snake River Canyon. For a detailed description of the Proposed Segment 9 route, see Section 3.4.2.

**Table 3.** RMP Amendments Needed by Route

<b>Routes</b>	<b>RMP Amendment Needed for Conformance</b>
Proposed 8	Allow the Gateway West Project outside the designated utility corridors.
	Gateway West will be allowed within 0.5 mile of occupied, sensitive plant habitat, with appropriate mitigation to protect sensitive plants, including slickspot peppergrass.
Proposed 9	Allow the Gateway West Project outside the designated utility corridors.
	Allow the Gateway West Project to cross the Cove non-motorized area.
	VRM Class II areas that are in view of the proposed powerline where micrositing would not sufficiently mitigate for VRM Class II impacts would be inconsistent with the VRM II classification and would be reclassified to VRM III. In these locations, VRM Class II areas within 250 feet of the route centerline would be reclassified to VRM Class III, taking into account the need for a 0.5 mile buffer distance from NHTs. Mitigation will include adjusting the alignment to ensure a 0.5 mile buffer from NHTs is maintained.
	Snake River SRMA: This SRMA consists of 15,900 acres in the Snake River Canyon downstream from Grandview, Idaho that is managed for the protection of cultural and scenic values. The SRMA designation has been reduced by approximately 6,400 acres to accommodate a major powerline.
	C.J. Strike SRMA: This SRMA consists of 16,900 acres surrounding C.J. Strike Reservoir along the Snake River. The purpose of the SRMA is to provide enhanced recreation management associated with the reservoir, and protection of the Oregon Trail adjacent to the reservoir. The SRMA designation has been reduced by approximately 3,100 acres to accommodate a major powerline ROW.
	Retain all public lands in the 43,000-acre ROW avoidance area to protect the visual corridor along the historic Oregon Trail and the resources along the Snake River canyon. Allow the Gateway West Transmission Line Project with mitigation as appropriate based upon Section 106 consultation."

### **3.0 SITING AND ROUTING CONSIDERATIONS FOR SEGMENTS 8 AND 9**

#### **3.1 Existing Transmission Lines across BOPNCA**

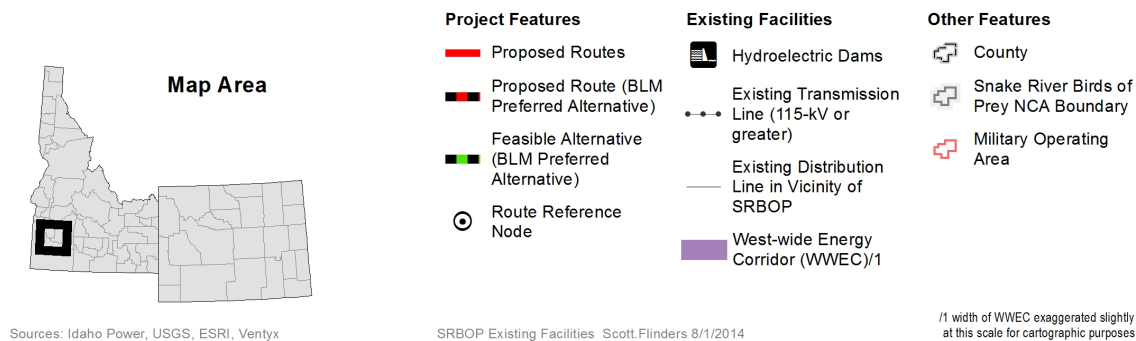
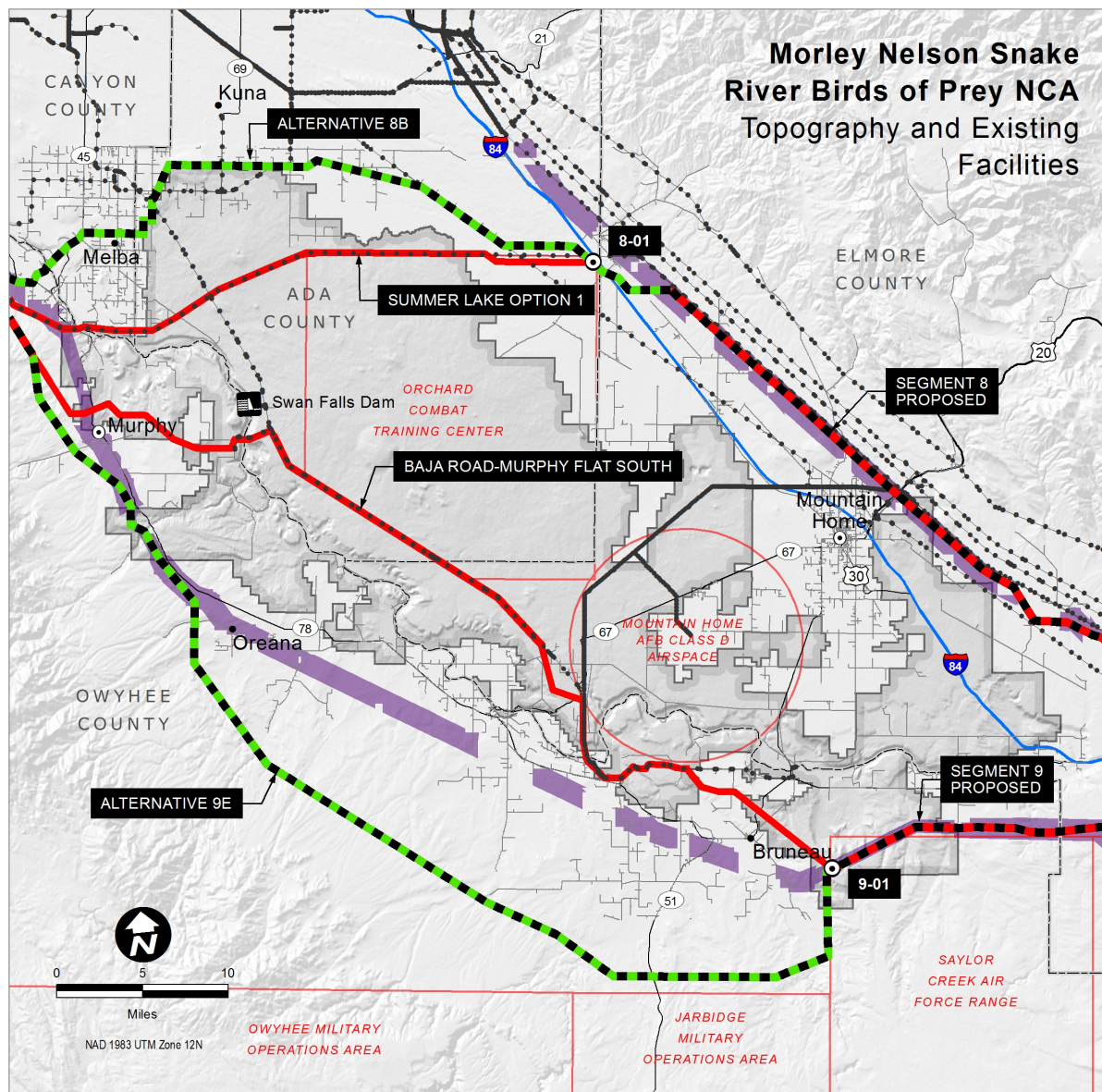
The BOPNCA was designated in 1993, after several dams had been constructed to provide clean hydroelectric power for Idaho and other Western states on the Snake River and after several transmission lines had been built along and across the Snake River within the boundaries of the designated National Conservation Area to convey that power and other power sources to and through Idaho. One of those dams, Swan Falls, is within the BOPNCA, and there are about 23.9 miles of lattice tower 500-kV, 0.7 mile of lattice tower and H-frame 230-kV, and 90.7 miles of lattice tower and H-frame 138-kV transmission lines presently within the BOPNCA. Figure 2 shows underlying topography, the location of the Swan Falls dam, and the existing high-voltage (138-kV or greater) transmission lines within the BOPNCA.

During development and refinement of the routes considered for this Project, the Companies were encouraged by multiple stakeholders, including land managing agencies, to take opportunities to route adjacent to existing lines where possible. Routing opportunities were few for this Project and while routes were developed to take advantage of opportunities, the location of routes and development of alternatives was driven by the numerous routing constraints, including sensitive resources and stakeholder concerns and priorities. The Companies worked with federal and state resource agencies and stakeholders to develop routes that addressed the numerous resource issues and stakeholder concerns associated with routes in the BOPNCA and adjacent areas; the stakeholder effort is summarized in Section 3.3. Since this effort, the Companies have stated:

1. a willingness to implement 250 feet of separation between the proposed 500-kV line and existing Midpoint to Hemingway Transmission line in Segment 8; and
2. the ability to double circuit portions of the proposed 500-kV line with existing 138-kV lines; within and near the BOPNCA. These two factors have greatly influenced the development of the Proposed Routes for Segments 8 and 9.

#### **3.2 National Energy Corridor Designation**

Two National Energy Corridors were designated across BOPNCA in a ROD signed by the BLM in January 2009 in response to the Section 368 of the Energy Policy Act of 2005, requiring the Secretary of the Interior to designate energy transport corridors on Federal land under existing authorities, such as those provided by the FLPMA. Those corridors include portions of both the Proposed and Preferred Routes for Segment 8 (east of Mountain Home) and Segment 9 (east of Bruneau and north of Murphy) as shown on Figure 1.



**Figure 2.** Topography and Existing Facilities

This 2009 Energy Corridor ROD, which amended several RMPs that covered the BOPNCA area at the time of the writing of the designation of corridors, states:

“Designation of Section 368 corridors and amendment of affected RMPs does not authorize any projects, mandate that future projects be confined to the corridors, or preclude BLM from denying a project in a designated corridor or requesting design revisions to meet unanticipated siting issues there. Future ROW proposals will need to comply with other applicable laws, regulations, and policies. ROW applicants will not be prevented from proposing projects outside the designated corridors for BLM’s consideration, although such proposals may need to go through the land use plan amendment process to be accommodated.”

During the final development of the National Energy Corridors, then-director of the BOPNCA, John Sullivan, worked with the national team to adjust the Corridor near Bruneau Dunes State Park to recognize that the Corridor would likely not be successful across a state park. The final corridor east of Bruneau, as declared, was developed, in part, to accommodate the Gateway West Project.

The intent of the National Energy Corridors, as reflected in the BOPNCA RMP, was to designate routes that would be, *by definition*, compatible with the underlying land management of the area. While it does not exempt a project located within the corridor from any aspect of NEPA or other federal consultation requirements, it does relieve it of a need, to the extent that it occupies this corridor, of seeking any land management plan amendments to permit the project. If a transmission line, *by definition*, is compatible with the underlying land management, it is reasonable to assume that the land managers recognize and accept the trade-off between economic development and other values in the NCA. This is an important point to the Companies, who are proposing to mitigate for impacts, even within the corridor, and to offer enhancement elements, even within the corridor, but at a lower ratio than outside the corridor.

### **3.3 Summary of Companies’ Consensus-Building Siting Work**

The Companies originally proposed to build Segments 8 and 9 entirely outside the BOPNCA except where the National Energy Corridors explicitly allowed for transmission line construction (JPC & RMP 2008). When the BLM initiated scoping meetings in May of 2008, numerous concerns were raised by local landowners, stakeholders, and governments raised numerous concerns regarding the placement of Segments 8 and 9. Based on a series of BLM- and Companies-sponsored meetings held in the vicinity of the proposed routes, several alternatives were developed.

As stated in a memo from the BLM accepting a revised siting study, “BLM has received a revised siting study dated December 30, 2009 from the Proponents of the Gateway West Transmission Line Project and received January 6, 2010. This supplemental study focuses on the alternatives that have been proposed by cooperating agencies and task forces and that were submitted to the BLM on or before September 4, 2009. In several cases, the Proponents made changes in their Proposed Routes based on those alternatives, and on October 6, 2009 provided the BLM with a memo explaining changes in the Proposed Route and providing preliminary recommendations regarding proposed alternatives.”



The Companies worked with local stakeholders and local BLM representatives across multiple venues for several years in an attempt to find a route that could be acceptable to all parties participating in these discussions. A summary of meetings held is found in Table 4, below.

Based upon the results of the consensus building meetings as identified in Table 4, the Companies revised their Proposed Route for Segment 8 to cross the BOPNCA parallel to the south side of the existing 500-kV Midpoint to Hemingway transmission line, based in part on a recommendation from the city of Kuna and adjacent landowners and stakeholders. The IDANG raised concerns regarding the crossing of the Alpha Maneuvering Sector of the OCTC, and the Companies responded by completing a feasibility study of rerouting the Midpoint to Hemingway transmission line to the north of the sector and routing Alternative 8D parallel to the Midpoint to Hemingway alignment through the BOPNCA. The BLM raised serious concerns regarding the Proposed Segment 8 crossing of the Snake River due to the sensitivity of the area and the Companies responded by completing a feasibility study and preliminary design for Alternative 8E which provides an alternative crossing, well south of the area of concern, that still largely followed existing transmission lines.

### **Boise RAC Subcommittee**

Most recently the Companies supported the Boise RAC in their evaluation of the Draft MEP and route options in and/or near the BOPNCA. The Companies participated in 11 Boise RAC public meetings. In addition to the meetings the Idaho Governor's Office of Energy Resources led two public field tours in and around the BOPNCA in order to assist with the evaluation and development of route alternatives (Boise RAC Subcommittee 2014a). During the course of these meetings, the Companies provided requested input and technical expertise regarding the engineering feasibility of Boise RAC evaluated route options, the purpose and need of the Project and the Draft MEP.

As stated in the 2014 Boise RAC report on route option in and/or near the BOPNCA,

“Many of the public who attended meetings stated that they appreciated the process that the subcommittee was using to evaluate several route options in and around the BOPNCA. Several members of the public stated that they are against locating the 500-kV transmission line near dairies, irrigated/pivot agriculture, and residences. Most of the public comments received by the subcommittee were supportive of routes going through the BOPNCA with appropriate mitigation and enhancement.”

Through this additional public evaluation process established by the BLM through adherence of the Project's ROD, the Companies believe that the Boise RAC recommended route options will be generally supported by local authorities and the public and represent a good local consensus on route location. The Companies have adopted the RAC recommended route options as their Proposed Routes within and near the BOPNCA.

**Table 4.** Companies' Siting and Routing Meetings

Date	Title	Location	Public (Y/N)	Staff	Attendees	Number of Attendees
12/15/2008	Murphy Landowner Meeting	Murphy, ID	Y	<b>IPC Staff:</b> Doug Dockter, Todd Adams, Kristi Pardue, Lynette Berriochoa, Scott Johnson, Mike Ybarguen, Mark Lupo <b>RMP Staff:</b> Shawn Graff <b>TT Staff:</b> Jim Nickerson, Susan Hayman, Diann Strom	Landowners	54
4/8/2009	Kuna City Officials Meeting	Kuna, ID	Y	<b>IPC Staff:</b> Kristi Pardue, Doug Dockter, Stephanie McCurdy, Lynette Berriochoa, Denny Trumble	BLM, Kuna City Officials	15
4/9/2009	Owyhee County Planning and Zoning Commission Meeting	Murphy, ID	Y	<b>IPC Staff:</b> Mike Ybarguen, Brent Lulloff	Administrator Mary Huff	
4/15/2009	Community Conversation	Gooding, ID	Y	<b>IPC Staff:</b> Todd Adams, Dan Olmstead, Gerald Orthel, Paul Ortmann <b>RMP Staff:</b> Shawn Graff <b>BLM Staff:</b> Lori Armstrong, Mike Courtney, Debbie Kovar, Jeff Steele, Jim Tharp <b>TT Staff:</b> Walt Vering, Diann Strom, Mike Takac	Landowners, targeted toward dairy farmers	5
4/23/2009	City of Kuna Engineering Department Meeting	Kuna, ID	Y	<b>IPC Staff:</b> Todd Adams, Justin Hitt <b>TT Staff:</b> Jim Nickerson	Gordon Law, Steve Hasson and Mayor Scott Dowdy	5
4/30/2009	Bruneau Town Hall Meeting	Bruneau, ID	Y	<b>IPC Staff:</b> Doug Dockter, Kristi Pardue, Blake Watson, Layne Dodson, Lynette Berriochoa <b>TT Staff:</b> Jim Nickerson, Ray Outlaw, Carl de Simas	County Commissioners, State Representatives, interested landowners	96
5/5/2009	Grand View Meeting		N	<b>IPC Staff:</b> Blake Watson		
6/3/2009	Town Hall Meeting	Melba, ID	Y	<b>IPC Staff:</b> Kristi Pardue, Doug Dockter, Todd Adams, Layne Dodson, Mike Ybarguen, Lisa Grow, Lynette Berriochoa, Rich Hahn, <b>RMP Staff:</b> Pam Anderson <b>BLM Staff:</b> John Sullivan, Aiden Seidlitz <b>TT Staff:</b> Jim Nickerson, Diane Adams, Ara Swanson	County Commissioners, State Representatives, interested landowners	95
6/11/2009	Town Hall Meeting	Kuna, ID	Y	<b>IPC Staff:</b> Kristi Pardue, Doug Dockter, Todd Adams, Layne Dodson, Mike Ybarguen, Bryan Wewers, Marsha Leese, Blake Watson, Rich Hahn <b>RMP Staff:</b> Pam Anderson, Shawn Graff <b>BLM Staff:</b> John Sullivan, Rosey Thomas <b>TT Staff:</b> Jim Nickerson, Walt Vering, Diane Adams, Carl de Simas	Ada County Commissioners, City of Kuna officials, general public, landowners, media	72

**Table 4.** Companies' Siting and Routing Meetings (continued)

Date	Title	Location	Public (Y/N)	Staff	Attendees	Number of Attendees
6/15/2009	City of Kuna Working Session		N	<b>IPC Staff:</b> Justin Hitt, Todd Adams <b>BLM Staff:</b> representatives		
6/18/2009	Owyhee County Committee Meeting	Grand View, ID	Y	<b>IPC Staff:</b> Todd Adams <b>TT Staff:</b> Walt Vering	Interested landowners and residents	
7/6/2009	Landowner Meeting	Kuna, ID	Y	<b>IPC Staff:</b> Justin Hitt <b>BLM Staff:</b> representatives	Ada County landowners (Kuna and Melba), BLM	
7/16/2009	Town Hall Meeting	Glenns Ferry, ID	Y	<b>IPC Staff:</b> Todd Adams, Kristi Pardue, Justin Hitt, Blake Watson <b>BLM Staff:</b> John Sullivan, Holly Hampton, Jeff Steele <b>RMP Staff:</b> Shawn Graff <b>TT Staff:</b> Jim Nickerson, Susan Hayman, Diane Adams	County commissioners, Glenns Ferry mayor, interested landowners	59
7/21/2009	Town Hall Meeting	Jerome, ID	Y	<b>IPC Staff:</b> Dan Olmstead, Gerald Orthell, Paul Ortmann <b>BLM Staff:</b> Holly Hampton, Jeff Steele <b>TT Staff:</b> Jim Nickerson, Diane Adams	County commissioner, interested landowners	19
7/22/2009	Town Hall Meeting	Gooding, ID	Y	<b>IPC Staff:</b> Dan Olmstead, Gerald Orthell, Paul Ortmann <b>BLM Staff:</b> Holly Hampton, Jeff Steele <b>TT Staff:</b> Walt Vering, Diane Adams		28
8/4/2009	Ada County Task Force Meeting		N	<b>IPC Staff:</b> Todd Adams, Justin Hitt <b>BLM Staff:</b> representatives	Charlie Baun	
8/11/2009	Owyhee County Meeting	Grand View, ID	N	<b>IPC Staff:</b> Todd Adams, Justin Hitt		
8/12/2009	City of Kuna Meeting	Kuna, ID	N	<b>IPC Staff:</b> Todd Adams		

**Table 4.** Companies' Siting and Routing Meetings (continued)

Date	Title	Location	Public (Y/N)	Staff	Attendees	Number of Attendees
8/19/2009	Ada Congressional Meeting	Kuna, ID	Y	<b>IPC Staff:</b> Layne Dodson, Rich Hahn <b>BLM Staff:</b> John Sullivan	Dale Willis (Owyhee County property owner), Charlie Baun (ECS meeting facilitator), Jed Jones (Osprey Ridge property owner), Duane Yamamoto (Kuna property owner), Owyhee County Commissioner Jerry Hoagland, Canyon County Commissioner Kathy Alder, Ada County Commissioner Rick Yzaguirre, Ada County Commissioner Fred Tillman, Ada County Commissioner Sharon Ullman, Matt Ellsworth (representing Senator Risch), Brian Ricker (representing Senator Crapo), Tom Schwaz (representing Representative Minnick), District 23 Representative Steve Hartgen, Frank Bachman (Bruneau property owner), Lavar Thornton (Kuna property owner), Bob Davenport (Kuna/Melba property owner), Sid Anderson (City of Kuna), Steve Hasson (City of Kuna), Craig Moore (City of Melba), Burl Smith (City of Melba), Klinchew (City of Melba)	
8/28/2009	Kuna Task Force Meeting		N	<b>IPC Staff:</b> Justin Hitt <b>BLM Staff:</b> representatives	Charlie Baun	
11/10/2009	Community Conversation	Mountain Home, ID	Y	<b>IPC Staff:</b> Todd Adams, Justin Hitt, Randy Lane, Kristi Pardue, Denny Tremble, Blake Watson <b>RMP Staff:</b> Pam Anderson, Shawn Graff <b>BLM Staff:</b> John Sullivan, Jeff Steele <b>TT Staff:</b> Diane Adams, Adair Muth	County commissioners, interested landowners, state representatives, staff from federal delegation	38
11/12/2009	Community Conversation	Kuna, ID	Y	<b>IPC Staff:</b> Todd Adams, Kristi Pardue, Layne Dodson, Justin Hitt, Piper Hyman, Randy Lane, Brent Luloff, David Thornton, Denny Tremble <b>RMP Staff:</b> Pam Anderson, Shawn Graff <b>BLM Staff:</b> John Sullivan, Jeff Steele <b>TT Staff:</b> Diane Adams, Adair Muth	County commissioners, interested landowners, state representatives, staff from federal delegation	68

The Companies have spent several years and many hundreds of hours in meetings with resource agencies and listening to diverse stakeholders and responding with alternative routes. While there will never be a perfect route that pleases everyone for a large and complex project like Gateway West, the Companies ask the BLM to seriously consider the RAC recommendations, which the Companies have adopted as their Proposed Routes. The Companies believe that these routes, in conjunction with this August 2014 MEP, will allow the BLM to authorize Segments 8 and 9 through the issuance of a ROD and ROW Grant.

### **3.4 History of Formal Proposed Actions and BLM Preferred Alternatives**

#### **3.4.1 Rationale for crossing the BOPNCA**

The fundamental rationale for proposing alternatives that cross the BOPNCA has several components:

- The Project's purpose, in part, is to connect the Midpoint and Hemingway substations with Segment 8 and the Cedar Hill and Hemingway substations with Segment 9. Given the location of these substations, it is impractical to entirely avoid the BOPNCA.
- To the extent feasible, the Project, along its 990-mile length, has been proposed to follow National Energy Corridors, state-designated corridors, utility corridors designated by BLM management plans, or to parallel existing transmission lines. This approach limits proliferation of transmission lines across the landscape and confines impacts to areas already impacted by similar utilities, a stated national goal of federal land managers (BLM 2009).
- There are two National Energy Corridors, confirmed and included in the BOPNCA RMP as utility corridors, designated across the BOPNCA. Utilization of these corridors is encouraged by BLM national policy and by the BOPNCA RMP and was employed wherever possible during siting and routing.
- Although all uses of the BOPNCA must conform with the enabling legislation to be considered, the Companies feel that the RAC-recommended Routes that the Companies have adopted as their Proposed Routes across the BOPNCA fundamentally do conform with the enabling legislation, that the transmission line does not adversely affect the resources and values for which this element of the NLCS was designated, and that when considered with this Draft MEP, mitigates impacts and enhances raptor populations, cultural, and scientific resources, which are elements of the enabling legislation.

The Companies therefore propose to the BLM that the Proposed Routes for Segments 8 and 9 be approved through the BOPNCA. Though the Companies believe that the project does not have an adverse effect on raptor populations, including the raptor prey base, and that no enhancement should be required, in the spirit of cooperation offer this Draft MEP to allow the BLM to approve routes across the BOPNCA as specified in the November 14, 2013, ROD for the Project. In support of these Proposed Routes, the Companies are submitting a revised SF299 and detailed Plan of Development Supplement describing the route location, proposed facilities, facilities to be removed and activities associated with construction and operation within and near the BOPNCA, of which this document is a part.

### 3.4.2 Project Siting History

In October 2007, the Companies submitted a preliminary application for a ROW from the BLM, which contained a project description with tentative proposals for the ten segments of the Project. A map was included that showed the substations to be interconnected and two-mile-wide study corridors that connected the substations, because the Companies wanted to work cooperatively with the BLM and other agencies, counties, and local landowners to develop the route details. The first siting study was published in September 2008 after the public scoping meetings had provided initial input. Supplemental siting studies were published in October 2008 and December 2009 responding to agency and stakeholder comments. The Companies have continued to work collaboratively with the BLM and other agencies through the six-year NEPA process and continue to work with the stakeholders to resolve the final issues and receive approval for Segments 8 and 9.

For each stage of the NEPA process, the Companies have responded to concerns and made practicable changes in routes and environmental measures, providing formal notification of these changes in a revised Project Description within a revised POD. POD revisions have been filed in August 2008 and May 2009 to support the pre-EIS scoping and alternatives development, January 2010 to support the Draft EIS, February 2012 and January 2013 to support the Final EIS, August 2013 to support the ROD, and August 2014 to support the Supplemental EIS for Segments 8 and 9, of which this document is a part.

Specifically for Segments 8 and 9, the Companies have worked closely with the Boise District RAC Subcommittee as it has reviewed a March 2014 version of this document and the Companies' proposed routes through the BOPNCA.

#### 3.4.2.1 Siting Study 2008

The Companies held, or participated in, a series of Project kickoff meetings to solicit agency input, which included input from the BOPNCA representatives. The Companies met with representatives of the BOPNCA and USAF Saylor Creek Bombing Range to propose a specific alignment that would minimize effects on the Bruneau Dunes State Park and not compromise the military training mission. Considering this, environmental constraints, existing transmission congestion, and topographical constraints, among other considerations, two primary parameters were developed that affected high-level routing decisions with respect to Segments 8 and 9, these were 1) that the BOPNCA be avoided to the extent practical to be consistent with BLM's RMP, and 2) that the new corridor follow an existing utility corridor or the West-wide Energy Corridor (WWEC) where possible. Portions of the routes that were located within the BOPNCA but that were also within the WWEC were not considered a disadvantage at the time (IPC and RMP 2008). Based on those factors, the Companies proposed the following routes within and near the BOPNCA in 2008:

**Segment 8** – A route that substantially avoided the BOPNCA by locating through the City of Kuna; similar to the BLM Preferred Alternative identified in the Final EIS.

**Segment 9** – A route that followed the WWE Corridor through the BOPNCA, identified as the Proponents' Proposed Route in the Final EIS.

### **3.4.2.2 Siting Study December 2009, SF-299 to support Draft EIS**

The second supplement to the siting study, published December 2009, incorporated consideration for concerns expressed by local cooperating agencies and the public during extended scoping for the Project after local cooperating agencies had reviewed the administrative draft of the EIS. This supplement was formally submitted as a project description change through an SF299 filed in January 2010 to support the Draft EIS.

**Segment 8** – The Companies documented as their Proposed Route for Segment 8 a location through the BOPNCA south of the existing Midpoint to Hemingway 500-kV transmission line. This decision was based on collaboration with representatives of Melba, Kuna, Ada County, and BLM to reach a mutually acceptable solution.

**Segment 9**—The Companies documented as their Proposed Route for Segment 9 the route that largely follows the WWE Corridor and is within the WWE Corridor. Location for the Proposed Route was negotiated and agreed to among the Companies, Bruneau Dunes State Park, the Air Force, and BLM to avoid both the park and the Saylor Creek Bombing Range.

### **3.4.2.3 POD to Support the Final EIS and ROD (January and August 2013)**

No substantive changes were made between the Draft and Final EIS to the Proposed Route for Segments 8 and 9.

### **3.4.2.4 Modified March 2014 MEP Proposed Routes**

After the FEIS was issued, the Companies, considering the feedback from the BLM and public, modified the Final EIS Proposed Routes. The Companies did not submit these route modifications formally to the BLM, but provided them in conjunction with an earlier version of the Draft MEP as a comment to the Final EIS during the public comment period.

**Segment 8** –The Companies modified the Final EIS Proposed Route for Segment 8 to include Alternatives 8D and 8E, which were proposed to avoid the Alpha Sector and the problematic crossing of the Snake River and the Halverson NMA, respectively.

Alternative 8D would not be in conformance with the management direction provided in in the BOPNCA RMP for sensitive plant habitat and for placing the transmission outside of the designated utility corridors, but would be in conformance with the resources and values for which the BOPNCA was originally It would also avoid impact to the IDANG and their training program.

Alternative 8E was proposed by BLM to avoid the Halverson Bar and Wees Bar Non-motorized Areas and an avoidance area associated with a National Register Historic District. Alternative 8E would minimize but not entirely eliminate indirect or visual impacts to cultural sites. While Alternative 8E crosses a small portion of the mapped avoidance area, it avoids direct impacts to known resources. It would follow the existing 138-kV transmission line along the Snake River on the east side and across the river, only leaving existing lines on the short leg from the river crossing north to where it reconnects with the Proposed Route (See Figure 2)

Alternative 8E would not be in conformance with the management direction provided in the BOPNCA RMP for sensitive plant habitat, utilization of existing corridors, and protections for visual resources, but would be in conformance with the resources and values for which the BOPNCA was originally designated.



**Segment 9** – During the siting and routing discussions and meetings with the various task forces formed by local landowners, governments, and the local BLM (see Section 3.3), additional alternatives for Segment 9 were considered. The Owyhee County task force proposed Alternative 9D, which parallels an existing line within the BOPNCA, and the BLM, in response to concerns raised by that proposal, proposed Alternative 9G. The Proposed Route as modified by Alternative 9G was termed the “consensus” route for Segment 9.

Owyhee County had indicated that it preferred to see the project located well within the BOPNCA, following an existing transmission line, in part because the County believes that the Proposed Route would have significant detrimental effect on the County’s landowners, farmers, economy, future development, and its tax base. Alternative 9D is a variant of an alternative identified by the Owyhee County Task Force. Avoidance of private lands and maximizing the use of public land was the primary sitting criteria. The specific alignment was developed through consultation between the BLM representatives and the Proponents based on information originally provided by the Task Force. This alternative substantially deviates from the designated WWE corridor (which is followed by the Proposed Route) and would cross 47.9 miles of the BOPNCA (thereby requiring an RMP amendment).

Alternative 9G is a further variant of Alternative 9D, recommended by local BLM staff. This alternative is generally coincident with Alternative 9D, but crosses the Snake River to the south to avoid potential routing issues with the Segment 8 crossing of the Wees Bar and Halverson Bar Non-Motorized Areas. It was developed in close coordination with landowners, Owyhee County, the State of Idaho, and the Field Office and BOPNCA staff of the BLM.

#### **3.4.2.5 RAC Recommended Alternatives**

In May 2014, the RAC Subcommittee issued its recommendations in two reports: the first report addressed routing options in or near the BOPNCA (Boise RAC Subcommittee 2014a) and the second concerned the revised Draft MEP submitted by the Companies to the RAC Subcommittee in March 2014 (Boise RAC Subcommittee 2014b). The RAC Subcommittee recommendations were adopted by the Boise District RAC and forwarded on to BLM for action.

The development and evaluation of route options by the RAC Subcommittee considered a wealth of local knowledge and included the participation of members of the public, local and state officials, and federal agencies (local and national-level). The Companies support the RAC Subcommittee recommended route options and have adopted these route options as the Companies current Proposed Routes as reflected in the August 2014 Standard Form 299 (SF299) revision and within this Draft MEP. The Companies have also incorporated some of the RAC Subcommittee recommendations for compensatory mitigation and enhancement within this Draft MEP.

#### **Segment 8 Proposed Route**

The Segment 8 Proposed Route (RAC Summer Lake Option 1) begins at MP 0.0 (MP 91.4 of the overall Segment 8 route and identified as 8-01 in Figure 1) and generally parallels the existing Midpoint to Hemmingway 500-kV transmission line, running about 1,500 feet south of the line before turning northwest and then crossing the existing line at MP 7.1. From there, the alignment generally parallels 250 feet north of the existing line the remaining 30 miles into the Hemingway Substation. At MP 8.2, the alignment crosses into the BOPNCA and follows the existing Midpoint to Hemmingway 500-kV transmission line for approximately 8 miles, north of

the boundary to the OCTC. At MP 12.7, the alignment crosses Pleasant Valley Road and continues west for approximately 3.5 miles. To avoid new agricultural impacts on private property and to minimize impacts to the OCTC's tank maneuver Alpha Sector, the alignment shifts south 250 feet at MP 16.2 and assumes the existing ROW of the Midpoint to Hemmingway 500-kV transmission line. A 1.1-mile section of the existing Midpoint to Hemmingway line would be rebuilt 250 feet south within the Alpha Sector. At MP 16.8, the two routes resume their previous alignments, with the new Summer Lake Option 1 route 250 feet north of the existing Midpoint to Hemmingway 500-kV line. The route crosses Swan Falls Road at MP 22.2 and the existing Bowmont to Canyon Creek 138-kV transmission line at MP 22.9. At MP 27, the alignment turns west (still parallel to the existing line), leaving the BOPNCA at MP 27.2, and crosses 2 miles of irrigated agriculture at the Canyon and Ada County lines, north of Celebration County Park, before crossing the Snake River between MPs 30.9 and 31.3 at the southern end of Noble Island. The alignment then turns northwest and parallels the existing line for approximately 5 miles (crossing Hemingway Butte at MP 35.2), before turning north through the existing China Gulch subdivision and into the Hemingway Substation.

### **Segment 9 Proposed Route**

The Segment 9 Proposed Route (RAC Baja Road-Murphy Flat South) generally follows the previous alignment for Proposed Route 9 for the first 90 miles and then Alternative 9G studied in detail in the Final EIS. Beginning south of Bruneau Dunes State Park, within the BOPNCA, the route leaves the established utility corridor in a northwesterly direction, crossing State Route (SR) 51 at MP 5.5, and leaving the BOPNCA at MP 6.7. At MP 10.3, the route re-enters the BOPNCA, double-circuiting with the existing C.J. Strike to Bruneau Bridge 138-kV transmission line near or on the current ROW for approximately 3.3 miles. At MP 14, the two circuits separate for approximately 0.2 mile to permit a more feasible crossing of the Narrows between C.J. Strike Reservoir and the Bruneau Arm. On the west side of the Bruneau River, the two lines again become a double-circuit line across the Cove non-motorized and recreation areas, west approximately 2.1 miles to the C.J. Strike Dam, where the existing 138-kV line double-circuits with the existing Evander Andrews to C.J. Strike 138-kV line north toward Mountain Home. The route parallels the existing double-circuit 138-kV line approximately 200 feet to the west for 4 miles, crossing the Snake River down river of the C.J. Strike Dam between MPs 17 and 18. At MP 20.8, the alignment shifts west, and then north again, to avoid encroachment in the Mountain Home Air Force Base controlled airspace and to avoid new impacts to private agricultural lands. At MP 24.8, the alignment crosses the Grand View Highway and then joins the existing Bowmont to Canyon Creek 138-kV transmission line in a new double-circuit alignment along the south side of the Big Baja Road. The new double-circuit alignment proceeds northwest, generally parallel to Big Baja Road and adjacent to the southern boundary of the OCTC, for 20.2 miles to a location southeast of Swan Falls and north of Tick Basin. Here the two circuits separate before crossing the Snake River canyon between MPs 47.3 and 47.8 near the existing Sinker Creek to Tap 138-kV transmission line crossing south of Sinker Butte. On the west side of the canyon, the route turns briefly south, parallel to the existing 138-kV line, and then turns west adjacent to the existing Sinker Creek Substation access road. At MP 50.8, the route turns northwest along the east and west faces of several low hills to minimize impacts to irrigated agriculture and to the Oregon National Historic Trail. Near MP 56, the route descends off of the Murphy Rim and crosses the Con Shea Basin north of Murphy. After crossing SR 78 at MP 57.7 north of the Rabbit Creek trailhead, the alignment rejoins the original

Segment 9 Proposed Route and continues in a northwesterly direction for approximately 9.5 miles into the Hemingway Substation.

### **3.4.3 BLM Preferred Alternatives**

The Draft EIS issued in July 2011 did not identify a BLM Preferred Alternative (BLM 2013a). Rather the Draft EIS recognized that Gateway West represented the largest and most complex proposed high-voltage transmission line in the western United States and recognized that there is no impact-free route choice for a large transmission line reporting that “In some segments of the Gateway West Project, where there are multiple resource conflicts, alternative routes often show dramatically different impacts on certain resources, and some alternatives were put forward to emphasize protection of one resource or land value over another. There are substantial segments of the public that have not had a chance to express their opinions on the issues and alternatives so far proposed. It is reasonable to expect those entities to propose additional alternatives or perhaps to present new information on alternatives currently considered.”

Following issuance of the Draft EIS, the BLM conducted 17 open house meetings and held a 90-day comment period to receive public comments. The BLM also met with counties, local task forces, and state and federal agencies to resolve issues raised by these entities.

### **Segment 8 – BLM Preferred Alternative**

The BLM’s Preferred Alternative follows the Proposed Route for Segment 8 for approximately 92 miles and then follows Alternative 8B to the Hemingway Substation. The Preferred Alternative generally avoids crossing the BOPNCA and the IDANG OCTC, but adversely affects private lands and slickspot peppergrass habitat to the north of the BOPNCA. The BLM selected the Proposed Route and Alternative 8B as its Preferred Route because this alignment:

- Follows designated corridors and existing linear infrastructure for approximately 76 percent of its length;
- Generally avoids the BOPNCA (crossing a 2-mile portion of it within an approved utility corridor), and it is likely the enhancement requirements of the BOPNCA enabling legislation that created the National Conservation Area (P.L. 103-64, Sec. 1(5), 3(a)(2), and 4(a)(2)) can be met in this area;
- Avoids the IDANG OCTC; and
- Avoids a National Register Historic District.

### **Segment 9 – BLM Preferred Alternative**

The BLM’s Preferred Alternative combines the Proposed Route for Segment 9 with Alternative 9E, which avoids private lands to the southwest of the BOPNCA but is longer and impacts more sagebrush habitat in Owyhee County. The BLM selected the Proposed Route and Alternative 9E (revised) as its Preferred Route because this alignment, as it relates to the BOPNCA:

- Follows a pinchpoint between the Saylor Creek Training Area and Bruneau Dunes State Park. A total of 8.8 miles of the alignment through this pinchpoint is unavoidably located on public land in the BOPNCA. However, 6.7 miles of that alignment is in a designated corridor on public lands within the BOPNCA. It is likely that the impacts on the BOPNCA in this area can be mitigated to meet the enhancement criteria of the enabling legislation. Alternative 9E does deviate a distance of 2.2 miles outside of this corridor to

avoid private lands just west of the BOPNCA boundary. A proposed land use plan amendment would allow this portion of the alignments outside of the designated corridor;

- Avoids the BOPNCA, except where it is located in the above the pinchpoint and for 2.5 miles between Oreana and Murphy, Idaho, to avoid sage-grouse preliminary priority habitat (PPH). A total of 1.5 miles of the 2.5 miles in the BOPNCA between Oreana and Murphy is located in a designated corridor on public land, and it is likely that the impacts on the BOPNCA in this area can be mitigated to meet the enhancement criteria of the enabling legislation. A proposed land use plan amendment would allow this portion of the alignment outside of the designated corridor; and
- Is not located in sage-grouse PPH.

The BLM has indicated that even its own Preferred Alternatives for Segments 8 and 9 would require offsetting mitigation and an enhancement offering to be considered in a BLM decision. The Companies do not agree. The BLM Preferred Alternatives largely follow designated utility corridors, which are National Energy Corridors, through the BOPNCA. The enabling legislation and the RMP both explicitly permit such crossings, and the RMP explicitly states that locating utilities within the corridor is consistent with the enabling legislation. However, in the spirit of cooperation, the Companies will offer both mitigation and enhancement, in proportion to the area disturbed, if the BLM Preferred Alternatives are selected and approved in a ROD.

## 4.0 IMPACT OF THE PROJECT ON BOPNCA

This section largely summarizes the results of the Final EIS analysis, with the exception of the Final EIS assertions regarding the relationship of predator and prey populations. The section presents first the impacts of the Proposed Routes (i.e., the RAC-subcommittee-recommended routes), then the impacts of the BLM Preferred Routes (i.e., Proposed 8 as modified by Alternative 8B and Proposed 9 as modified by Alternative 9E).

This summary focuses on those resources emphasized in the enabling legislation. Enabling legislation for the BOPNCA, while focusing on the conservation, protection and enhancement of raptor populations and habitats and the natural and environmental resources and values associated therewith, also mentions important historic and cultural resources (including significant archaeological resources) that should be protected and appropriately managed.

The two tables below show the disturbance impacts of the Companies' Proposed Routes and the BLM Preferred Routes. The Companies have focused the discussion on these routes because other routes have substantial disadvantages. Table 5, below, shows the total estimated disturbance from construction, including all those areas that will be reclaimed as part of the Project-wide mitigation plan, while Table 6, below, shows the total estimated long-term site occupancy from permanent facilities associated with the Project, including the transmission towers and their permanent access roads. Totals may appear off by up to an acre due to rounding.

**Table 5** Acres of Construction-Related Project Disturbance within BOPNCA on BLM-Managed Lands

Segment	Route	Acres of Disturbance from Construction of Project within BOPNCA (Federal lands)		
		Natural Vegetation	Disturbed Vegetation <sup>1/</sup>	Total
8	BLM Preferred	38	49	87
	Proposed	20	300	321
9	BLM Preferred	76	188	264
	Proposed	116	830	947
Combined	BLM Preferred	114	237	351
	Proposed	137	1,131	1,267

1/ The "disturbed vegetation" class includes areas with roads, cheat grass invasion, and other disturbances to the naturally occurring vegetation in the area prior to construction.

**Table 6.** Acres of Operation-Related Disturbances within BOPNCA on BLM-Managed Lands

Segment	Route	Acres Occupied during Operation of Project within BOPNCA (Federal lands)		
		Natural Vegetation	Disturbed Vegetation <sup>1/</sup>	Total
8	BLM Preferred	3	5	8
	Proposed	2	27	28
9	BLM Preferred	7	21	28
	Proposed	14	56	69
Combined	BLM Preferred	10	26	36
	Proposed	15	82	97

1/ The "disturbed vegetation" class includes areas with roads, cheat grass invasion, and other disturbances to the naturally occurring vegetation in the area prior to construction.

## 4.1 Cultural Resources

The Proposed Route for Segment 8 would avoid the utility avoidance/restricted area around a National Register Historic District within the BOPNCA. The crossing of the Snake River would likely encounter some cultural issues because the site density near the river is higher for both prehistoric and historic resources. Some direct effects on archaeological sites may need to be addressed through avoidance micro-siting with the Segment 8 Proposed Route, but indirect effects can be minimized by paralleling closely the existing line. The Preferred Route for Segment 8 avoids the District.

Previous surveys in the area of Segment 9 have been limited, which may account for the low known site density, but they have demonstrated that the area was a center for cultural interactions, suggesting that actual site density may be moderate to high. The Proposed Route would cross a National Register Historic District and parallel NHTs through the BOPNCA. The Proposed Route crosses 9 NHT segments, while the Preferred Route for Segment 9 does not cross any NHT segments.

The BOPNCA RMP emphasizes managing areas along the Oregon NHT as VRM Class II, to provide reasonable protection for the NHT. The Segment 9 Proposed Route is not consistent with these VRM requirements and would require an amendment to the land use plan reclassifying specified areas affected by the transmission line to VRM Class III. Reclassification areas would require micro-siting to ensure a one-half mile buffer from NHTs and to minimize visual impacts to the cultural resources.

The Programmatic Agreement for this project provides for the development, review, and approval by BLM and the Idaho SHPO of a Historic Properties Treatment Plan (HPTP) for unavoidable adverse effects to historic properties eligible for listing, or listed on, the National Register of Historic Places. Once a route is selected for Segment 8 and for Segment 9, the Companies will develop an HPTP to fully mitigate for adverse effects on trails and other cultural sites and areas.

## 4.2 Vegetation Resources

### 4.2.1 General Vegetation

Segment 8 would cross very little wetland area and no forested areas within BOPNCA, regardless of route chosen. The vast majority of the vegetation is shrubland, most of it disturbed by previous human activities. The other two important vegetative types are grassland and agriculture in the Segment 8 area.

Similarly, both the Preferred and Proposed Routes for Segment 9 largely impact already-disturbed vegetation, including disturbed sagebrush and disturbed grasslands within the BOPNCA. See Tables 5 and 6, above, for estimates of disturbance acres for construction and for long-term site occupancy of transmission infrastructure for the BLM Preferred and the Companies' Proposed Routes.

Ecological site potential is an approach developed by the Natural Resources Conservation Service (NRCS) for classifying ecological sites on the basis of soil and climate characteristics, then further classifying them based on vegetation (NRCS 2014d). The NRCS proposes a model to identify the "state" of an ecological site, where State 1 is the reference "natural" or "pre-settlement" vegetation type for that ecological site. Other States are identified based on whether

it is likely that the vegetation observed can once again achieve State 1 (typically identified as States 1.2, 1.3, etc.) or whether conditions have changed so much that a “threshold” has been crossed (State 2). If a threshold has been crossed such that the site is very unlikely to be able to achieve any version of State 1, then NRCS recommends identifying a State 3 as the mitigation goal, which is a practical estimate of what vegetation the degraded or altered site, in its State 2, can reasonably be expected to support. The Companies support this approach and recommend the following:

“Baseline” should continue to be defined as the current conditions on the ground. It should be further quantified with a field survey for the route selected by the BLM for approval. The field survey should include vegetation sampling and the more qualitative Rangeland Health assessment, that will encompass adjacent land to the proposed restoration site and evaluate the ability of mitigation activities to be successful in the larger context of its surrounding landscape.

Instead of proposing the “return” of the site to baseline conditions, the Companies propose that a reasonable mitigation goal be assigned to each ecological site crossed by the Project based on its baseline condition. For much of the BOPNCA, where past land uses have degraded many ecological sites to a State 2 condition, that mitigation goal will be a reasonably achievable State 3. Where past land uses have not seriously degraded an ecological site and it is currently in a variation of State 1, a reasonably achievable goal might be another variation of State 1. Thus, the objective of compensatory mitigation could be revised to read, “The compensatory mitigation program addresses the “residual effects” which persist after standard mitigation has been implemented. This additional mitigation is required to move the impacted area to a reasonably achievable mitigation goal vegetation type, specific for each ecological site impacted.”

The BLM has encouraged the Companies to use the NRCS Ecological Site Potential approach to determining the potential for reclamation and restoration within BOPNCA. Table 7 shows the ecological sites mapped for Proposed Segment 8 and Segment 9 in the BOPNCA. It also shows that there are important portions (38% for Segment 8 and 12% for Segment 9) where data are not available. The Companies will work with the BLM to further develop these data.



**Table 7.** Ecological Sites Mapped for Proposed Segment 8 and Segment 9 in the BOPNCA

Segment	Ecological Site Name <sup>1/</sup>	Relative Proportion of the Route Occupied by Ecological Site	ESD Status <sup>2/</sup>
Segment 8	CHURNING CLAY 12-16 ARCA13/POA	0.5%	Final
	SANDY LOAM 8-12 ARTRW8/ACHY-HECOC8	2.2%	Draft
	CALCAREOUS LOAM 7-10 ATCO-PIDE4/ACHY-ACTH7	2.4%	Draft
	LOAMY 8-12 ARTRW8/PSSPS-ACTH7	11.6%	Final
	STONY 10-12 ARTRW8/PSSPS	16.0%	Draft
	CLAYPAN	29.4%	Final
	No Data	38.0%	NA
Segment 9	Non-vegetated land	0.2%	NA
	SHALLOW LOAMY 8-12 ARTRW8/PSSPS	0.2%	Final
	LOAMY 10-13 ARTRW8/PSSPS	0.3%	Final
	CHURNING CLAY 12-16 ARCA13/POA	0.3%	Final
	SALINE BOTTOM 8-12 SAVE4/LECI4	1.9%	Draft
	SILTY 7-10 KRLA2/ACHY	2.4%	Draft
	SAND 8-12 ARTRT/ACHY	3.3%	Draft
	No Data	12.1%	NA
	SANDY LOAM 8-12 ARTRW8/ACHY-HECOC8	17.7%	Draft
	LOAMY 8-12 ARTRW8/PSSPS-ACTH7	18.1%	Final
	CALCAREOUS LOAM 7-10 ATCO-PIDE4/ACHY-ACTH7	43.5%	Draft

1/ NRCS 2014c.

2/ NRCS 2014d and Sutter 2014.

3/ Ecological site description not available for soil map unit.

## 4.2.2 Invasive Plant Species

The establishment of invasive plant species can affect the quality of habitat through competition with, and eventual replacement of, desirable native species. Replacement of native species can have various environmental effects including changes in fire regime (increasing the frequency and severity of fires), changes in the nutrient regime of soils, and increased soil erosion. For example, cheatgrass (*Bromus tectorum*) can proliferate rapidly in disturbed arid and semi-arid sagebrush grasslands, and can increase the rate and severity of fires, thereby creating a cycle of disturbance that ultimately increases the rate of cheatgrass establishment and spread. This has occurred in many places within the BOPNCA and cheatgrass eradication and replacement with native vegetation is a major focus of the BOPNCA reclamation and restoration program.

To effectively implement measures for limiting the spread or introduction of invasive plant species, the Companies have prepared and submitted in the August 2013 POD detailed framework Reclamation and Noxious Weed Plans, whose measures will be implemented prior to, during, and after construction to limit the introduction or spread of invasive plant species due to construction and operation and maintenance activities.

## 4.2.3 Wetlands

Construction of the Proposed or the Preferred Route for Segment 8 would not affect wetland areas within the BOPNCA.

Approximately 0.2 acre of wetlands and riparian areas would be affected by construction of the Preferred Route of Segment 9 within the BOPNCA. Approximately 1.1 acres of wetlands and riparian areas would be affected by construction of the Proposed Route within the BOPNCA.

During detailed design for the Project, once a route has been approved, the Companies' engineers will work to avoid impacts to wetlands and to minimize impacts to riparian areas both inside and outside the BOPNCA. Unavoidable impacts to wetlands and riparian areas will be subject to full compensatory mitigation requirements of the U.S. Army Corps of Engineers 404 permit process.

#### 4.2.4 Special Status Plant Species

Slickspot peppergrass (*Lepidium papilliferum*) was listed as threatened under the ESA on October 8, 2009 (74 *Federal Register* 52014). On August 8, 2012, the Idaho District Court vacated and remanded the USFWS decision to list slickspot peppergrass. For the purposes of the Final EIS, the BLM decided to continue to conference with the USFWS and will treat slickspot peppergrass as a species proposed for listing and manage the habitat as such. Since the Final EIS was published, the USFWS reopened the comment period on both the proposed listing as Threatened and on the designation of Critical Habitat. Those comment periods closed June 5, 2014, and the USFWS is preparing a final rule for the listing and the critical habitat. The Companies anticipate that the BLM will continue to conference with the USFWS on this species in anticipation of its re-listing and of the listing of critical habitat. In the interim, the Companies assume the BLM will treat the proposed listing of critical habitat as if it were final and will continue to account for impacts to potential habitat.

This species occurs in semi-arid, sagebrush-steppe habitats of the Snake River Plain and adjacent foothills in southwestern Idaho and the Owyhee Plateau in south-central Idaho. It occurs only in slickspot microsites, which have soils much higher in clay content and significantly higher in sodium than adjacent areas.

Table 8, below, shows the potential impacts to slickspot peppergrass proposed critical habitat and potential habitat for the BLM Preferred and the Companies' Proposed Routes within the BOPNCA.

**Table 8.** Estimated Construction Impact (acres) on Proposed Critical and Potential Habitat for Slickspot Peppergrass on Federal Lands, BOPNCA

Segment	Route	Acres of LEPA Habitat Types, BLM and BOR Lands, BOPNCA	
		Proposed Critical Habitat	Potential Habitat
8	BLM Preferred	26	0
	Proposed	8	58
9	BLM Preferred	0	20
	Proposed	0	0
Combined	BLM Preferred	26	20
	Proposed 8 & 9	8	58

The BOPNCA RMP requires that "surface disturbing activities be located at least ½ mile from occupied sensitive plant habitat." The RMP also requires the implementation of certain conservation measures in slickspot peppergrass habitat. Therefore, an amendment to the RMP would be required for the Segment 8 Proposed Route to be in conformance with the RMP.

In the Biological Assessment, Appendix M of the Final EIS, the BLM stated that Project activities “may affect slickspot peppergrass and slickspot peppergrass habitat” and that “therefore, the BLM determined that the Project may affect, and is likely to adversely affect, slickspot peppergrass.” The BLM goes on to state that “proposed critical habitat would be crossed by the ROW of Segment 8” and that the “Project may affect, and is likely to adversely affect, proposed critical habitat for slickspot peppergrass.” For Alternatives 8D, 8E, 9G, and the Preferred Routes for Segment 9, they concluded that the Project will have no effect on slickspot peppergrass. The Final EIS also concluded there would be no effect on any other sensitive plant species. The Companies expect that the Supplemental EIS will conduct a similar analysis of the RAC-recommended routes and come to a similar conclusion.

Although the BLM concluded that the Project may affect slickspot peppergrass as the portions of the Project may cross slickspot peppergrass habitat, the Project will implement routing and siting measures and environmental protection measures to minimize impacts to and largely avoid slickspots. The U.S. Fish and Wildlife Service (USFWS) stated in the Biological Opinion and Conference Opinion, that the “proposed action is not likely to jeopardize the continued existence of slickspot peppergrass.” The Companies expect that further conferencing with the USFWS regarding the RAC-recommended routes will come to a similar conclusion.

## **4.3 Wildlife Resources**

### **4.3.1 General Wildlife**

The dominant habitat type along the Proposed Route of Segment 8 and Segment 9 within BOPNCA is disturbed grassland, followed by disturbed shrubland. These habitats support small mammals, birds, big game, and many other species. These habitats, already fragmented with existing roads and transmission lines, would be further fragmented with the construction and operation of an additional line.

### **4.3.2 Raptor Impacts**

The Final EIS states, “The five raptor species that are the most common in the Analysis Area have specific habitat requirements and nesting habits. Ferruginous hawk, prairie falcon, golden eagle, and burrowing owl are open-country birds, living in grasslands and shrublands. Ferruginous hawks build their nests on the ground, hillsides, rock outcrops, creek banks, buttes, bluffs, sagebrush, and human made structures in unforested areas with good visibility. Prairie falcon and golden eagle nest most commonly on cliffs or bluffs, but also in trees, manmade structures, or other sites. Burrowing owls are closely associated with prairie dogs or other burrowing animals, as they re-use existing burrows for their nest sites. Red-tailed hawks also prefer open to semi-open habitats such as sagebrush shrublands, and in Wyoming are often found nesting in cottonwoods (*Populus* spp.; Preston and Beane 2009). The Forest Service and BLM, based on the best available science, are using one-mile buffers around the nests of all raptor species to minimize direct and indirect effects. The [FEIS] Proposed Route for Segment 8 lies within 1 mile of the highest number of raptor nests, 307, of any of the segments. This segment runs through the SRBOP, home to the largest concentration of nesting raptors in North America.<sup>1</sup>”

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1 Final EIS, Section 3.10, Page 3.10-18

The Companies anticipate that the BLM will conduct a similar analysis for the RAC-recommended routes. Using the same data set as for the Final EIS, the Companies conducted a preliminary analysis that shows that the presently Proposed Segment 8 is within a mile of 178 raptor nests while Proposed Segment 9 is within a mile of 608 raptor nests, 541 of which are on federally managed lands. The question remains whether such proximity is an adverse effect. The Companies believe there is considerable evidence in the literature that shows no adverse effect on raptors from transmission lines.

As stated in correspondence to the BLM on August 8, 2012, Karen Steenhof, raptor biologist, wrote:

“In 1981, less than a year after Secretary of the Interior Cecil Andrus withdrew 482,000 acres of public land to protect birds of prey nesting in the Snake River Canyon in southwestern Idaho, Pacific Power and Light Company (PP&L: now PacifiCorp) began construction of a 500-kV transmission line across what is now the Morley Nelson Snake River Birds of Prey National Conservation Area. Raptor Expert Morley Nelson assisted PP&L with routing the line so it would not adversely affect raptors and with designing platforms for transmission towers that would encourage raptor nesting (Nelson and Nelson 1976, Nelson 1982).

From 1981 through 1989, Bureau of Land Management (BLM) and PP&L biologists monitored the response of raptors and ravens to the transmission line (Engel et al. 1992, Steenhof et al. 1993). They found that the 500-kV transmission line enhanced opportunities for raptor perching, nesting, and roosting. Unlike smaller distribution lines, large transmission lines do not present an electrocution hazard for large birds because the wires are too far apart for raptor wings to contact more than one wire at a time. Collision with transmission lines does not appear to be an issue for birds of prey in desert environments.

Raptors and ravens were attracted to the 500-kV line, and productivity of hawks and eagles nesting on transmission towers was as good as and sometimes better than that of those nesting in the canyon. In some cases, transmission line towers provided more secure nesting substrate than natural nesting sites. By 1989, 8 pairs of Golden Eagles, 11 pairs of Ferruginous Hawks, 33 pairs of Red-tailed Hawks, and 81 pairs of ravens were nesting on the transmission line between Midpoint, Idaho and Summer Lake, Oregon (Steenhof et al. 1993). In addition, biologists documented 13 communal night roosts of Common Ravens on the transmission line, including one roost on transmission line towers within the MNSRBOPNCA with more than 2100 ravens, one of the largest raven communal roosts ever documented in the world (Engel et al. 1992). Ravens used the roosts from spring to autumn, and as many as 700 roosted on a single tower.”

It is clear from the existing literature and observations within the BOPNCA that transmission lines do not adversely affect and apparently enhance the raptor and raven populations. The Final EIS asserts that the enhancement of raptor and raven populations could have an adverse effect on small mammal populations and therefore reduce raptor and raven populations:

“If the Project’s transmission line and structures becomes an attractant to raptor and raven, and their numbers increase along the Project, this factor coupled with the reduced shrub cover in areas recovering from construction disturbances (i.e., a reduction in hiding cover for small animals) could result in increased predation rates on prey species, including small mammals. The primary mammalian prey species for diurnal predatory birds in the Project area include, but are not limited to, ground squirrel, black-tailed jackrabbits, cottontails, while many nocturnal raptor

species take voles, mice, and rats (Snake River Birds of Prey RMP 2008). Increase (sic) predation rate on prey has the potential to subsequently impact raptor populations. For example, the population size and health of golden eagles in SRBOP has been linked to the population size of jackrabbits (Steenhof et al. 1997; Snake River Birds of Prey RMP 2008); as a result, increase predation rates on jackrabbits in SRBOP has the potential to impact the population size and health of golden eagles in SRBOP.<sup>2</sup>

The Companies do not find this assertion consistent with the best available science. There is no convincing information in the literature that predators are limiting (small) mammal prey populations (Korpimäki and Krebs 1996, Krebs 2002); there is even less evidence that this is the case with avian predators (Newton 1993, 1998). Thus, the statement that an influx of avian predators using the new transmission structures for hunting perches to procure prey is unfounded. Steenhof et al. (1993) documented that common ravens (*Corvus corax*) and red-tailed hawks (*Buteo jamaicensis*) were the 2 most common nesting birds (i.e., 114 out of 134 total nests) using towers along a 350-mi newly built transmission line (0.4 nest/mi). It is unlikely that this relative small number of nesting birds would have any impact on their prey base along the 350 mile line. Also, common ravens roosted in large numbers on transmission towers of this line (Engel et al. 1992). However, ravens were already roosting in the general area where the transmission line was built (Engel et al. 1992) and shifted their roost to a safer location. Large raven roosts were likely the result of locally abundant food sources associated with agriculture that is present year-round (Engel et al. 1992). Thus, there was not an influx in the area due to the building of the transmission line as suggested by the BLM, rather there was a redistribution of the existing population. Roosting ravens dispersed in the morning to feed at feed-lots and other agriculture associated enterprises (Engel et al. 1992). There was no evidence that these birds used the transmission towers to exploit small mammal populations.

The BLM also states that increased predation of prey may impact specialized predators, such as golden eagles, because of over exploitation of the prey afforded by more perching opportunities with the new line. Extensive research has been conducted by the BLM in the BOPNCA since the early 1970s on birds of prey. Golden eagles (*Aquila chrysaetos*), prairie falcons (*Falco mexicanus*), and red-tailed hawks (*Buteo jamaicensis*) are 3 of the most extensively studied birds of prey species in relation to their prey (Kochert et al. 1999; Marzluff et al. 1997; Steenhof and Kochert 1988, Steenhof et al. 1997, 1999) in the BOPNCA. Steenhof et al. (1997) showed that jackrabbit abundance influenced eagle production (number of young fledged per pair) during about 2/3 of the 23 years study. Prairie falcon reproductive rates are closely tied to ground squirrel relative abundance (Steenhof et al. 1999, USDI 1996). Ground squirrel abundance is related to climatic fluctuations over time (Van Horne et al. 1997, 1998). Thus, there is no evidence that even specialized avian predators are limiting their principal prey populations in the BOPNCA. In fact, it is the reverse; prey populations limit avian predator populations. Therefore, BLM's statement that building of a new transmission line would cause an influx of avian predators that would deplete small mammal populations which, in turn, would affect nesting avian predators has no factual basis and is not supported by fundamental research on prey-predator populations conducted by the BLM in the BOPNCA.

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<sup>2</sup> Final EIS, Section 3.10, Page 3.10-29



The Companies maintain that there is no evidence that constructing and operating the Proposed Routes for Segments 8 and 9 will have an adverse effect on the resources and values for which the enabling legislation designated the BOPNCA. In particular, construction and operation of these two segments will not have any long-term adverse impact on raptors and ravens or on their prey or the prey's habitat.

## **5.0 PROPOSED COMPENSATORY MITIGATION AND ENHANCEMENT APPROACH**

As previously referenced, the November 14, 2013 ROD for the Project states,

“The Proponents’ proposal, including environmental protection measures, and BLM standards and requirements for surface-disturbing activities for routes in the NCA would conserve and protect NCA resources.”

Also as stated in Section 4.3.2, there is no adverse effect on raptors or their prey species due to the lattice structures, rather these structures provide additional nesting, perching, and roosting substrates. The Project would have no adverse impacts on the values for which BOPNCA was designated and may enhance the BOPNCA in important ways. However in the interest of receiving a ROW grant for both Segments 8 and 9, the Companies have proposed this Draft MEP, which includes additional compensatory mitigation to fully offset all impacts to habitat in the BOPNCA from the long-term presence of the Project back to “baseline.” It also provides enhancement to raise the value of the BOPNCA above that baseline to further advance the protection and enhancement of the objects and values of the BOPNCA.

The Companies recognize that although access roads within the BOPNCA provide benefits, they may also increase public access and thereby may increase the risk of vandalism, weed infestation, litter, etc. This potential increase in risk is accounted for in the MEP. The Companies further acknowledge that BLM standards for mitigation within the NCA require offset of impacts “back to baseline.” The Companies, in consultation with the BLM, assume that “baseline” is the affected environment as presented in the Final EIS. This has been described in Section 4.0, above.

The Companies’ MEP considers the following key elements:

1. Robust Project-wide avoidance, minimization, restoration, and compensatory mitigation measures
2. Additional mitigation proposed herein;
3. Mitigation and enhancement ratios;
4. Effectiveness of restoration projects within the BOPNCA (i.e., recognizes monetarily that restoration projects are not 100% effective);
5. Lag time required for restoration to be fully successful;
6. Long-term maintenance and monitoring;
7. Protection of important cultural sites through property purchase;
8. Long-term law enforcement emphasis to change inappropriate public misuse of the BOPNCA, which in turn enhances the lawful visitor experience; and
9. Enhancement of the visitor experience through education, research, and public outreach.

## **5.1 Avoidance and Minimization through Routing and Environmental Protection Measures**

The POD prepared to support the ROD, submitted August 2013, fully incorporated all the Environmental Protection Measures (EPMs) specified in the Final EIS and provided substantial additional detail in Environmental Protection Plans. By submitting the August 2013 POD the Companies explicitly incorporated the EPMs and Plans as part of the Project design and Best Management Practices (BMPs). See Appendix A for a list of the EPMs and Plans that apply to the BOPNCA.

The routes analyzed in the Final EIS represented several years of cooperative work with the BLM and other agencies (see Section 3.4 for siting history). From the initial siting and routing efforts through work with the Boise RAC subcommittee in 2013 and 2014, the Companies have made every effort to avoid sensitive areas where feasible. Where complete avoidance was not feasible, the Companies have incorporated many EPMs that minimize impacts, including limited operating seasons.

## **5.2 Reclamation and Project-Wide Compensatory Mitigation**

In addition to the avoidance and minimization measures that are part of the Project design and description, the Companies also committed to Project-wide reclamation for construction-related disturbances. Please see the following plans, submitted as part of the August 2013 POD and made a part of the ROD, for additional details on commitments to reclamation:

- Environmental Compliance Management Plan
- Reclamation Plan
- Noxious Weed Plan
- Stormwater Pollution Prevention Plan

Recognizing that there will be residual impacts on important resources even after avoidance, minimization, and reclamation measures are in place, the companies have prepared and submitted a revised package of compensatory mitigation plans that cover impacts to sage-grouse habitat, to forested migratory bird habitat, waters of the U.S., and historic trails. Appendix A contains a table demonstrating the applicability of the various EPMs to the BOPNCA and a table showing the applicability of the plans to the BOPNCA.

The Final EIS does not show sage-grouse habitat, forested habitat for migratory birds, or substantial wetlands within the BOPNCA. Therefore, the compensatory mitigation plans designed for sensitive habitats Project-wide largely do not apply to the BOPNCA.

Impacts to historic trails will be fully compensated through the trails mitigation plan, currently in draft, that will be finalized in consultation with the BLM and the Idaho SHPO for trails impacts in Idaho, including but not limited to, those within the BOPNCA. As specified in the Programmatic Agreement, site-specific Segment Plans will be developed, reviewed, and approved as appendices to the Project-wide Historic Properties Treatment Plan as historic properties that cannot be avoided are identified and appropriate treatments proposed and accepted.

In conclusion, the Companies have committed to extraordinary measures to avoid and minimize impacts, reclaim areas after construction, and provide for third party monitoring and reporting to assure measures are applied. Beyond those measures, the Companies have committed to provide substantial funding in Project-wide compensatory mitigation.

The Companies recognize that the NLCS administration asserts that, in order to allow the Project to cross the BOPNCA, additional mitigation and enhancement measures are necessary, even above and beyond those now part of the Project Description as explained above. Section 5.3 discusses the concept of additional mitigation, while Section 5.4 discusses enhancement of the values for which the BOPNCA was established.

### **5.3 Restoration and BOPNCA Mitigation Goals**

In consultation with the BLM, the Companies offer a compensatory mitigation proposal to bring the BOPNCA to “baseline” based on the long-term operational footprint. The Companies understand that although BLM does not require additional compensatory mitigation for the existence of transmission infrastructure on public lands generally, that the NLCS policy is to require additional compensatory mitigation because the baseline before the transmission line is built included the area to be occupied by the tower pads and access roads. The footprint of long-term site occupancy by the Project infrastructure is shown in Table 6, above.

There has been substantial discussion regarding what constitutes “baseline,” and more importantly, mitigation goals, for the various ecological sites crossed by the Project within the BOPNCA. The Companies believe that baseline is, and should continue to be, defined as the current condition of the vegetation. Mitigation goals should be based on a science-based likelihood of success, and the NRCS state and transition model methods provide that approach. The Companies are now, and have consistently been offering, a 1:1 ratio for the long-term footprint of the Project. The components of compensatory mitigation include funding for habitat restoration and law enforcement (refer to Section 6.1).

At a 1:1 ratio, for every acre of long-term occupancy, regardless of the disturbed or undisturbed nature of the baseline vegetation prior to construction, the Companies are proposing to fund one acre of off-site small-project restoration work within the BOPNCA, estimated \$1,800 per acre. The Oversight Committee will be in charge of determining the desired future condition of that work, determining the kind of restoration needed, and monitoring for success. See Section 6 for details of the Portfolio.

New access roads within the BOPNCA may provide additional opportunities for inappropriate public use as well as for the more positive benefits of firebreaks and emergency access. In consultation with the BLM, the Companies therefore also offer funding for law enforcement to help compensate for the additional indirect effects of new roads. The Companies, based on information from BLM, estimate that a full-time equivalent (FTE), including salary, transportation, and overhead costs, to be approximately \$140,000 annually. Since the new road will not require an entire FTE of law enforcement attention to change public behavior, the Companies propose to provide one quarter FTE of funding as mitigation for additional roads, or \$35,000 annually, for 10 years. The reasoning for limiting the funding to 10 years is that focused law enforcement, including advertising, messaging, and patrol, should substantially reduce inappropriate behavior in 10 years.

For the routes the Companies have proposed within the BOPNCA, the total “footprint” includes 97 acres, while for the BLM-Preferred routes, there are 36 acres of long-term project occupancy. Restoration costs of \$174,780 and law enforcement of \$35,000 annually for 10 years brings the total offered for mitigation to \$524,780 for the Companies’ Proposed Routes for Segments 8 and 9. The Companies believe that this mitigation offer for the long-term presence of the transmission line fully compensates for the long-term presence of the transmission line and meets this requirement of the NLCS policy.

## 5.4 Enhancement Ratios

The Companies offer, in the spirit of cooperation and with the intent of fully supporting a BLM decision for Segment 8 and Segment 9 in 2014, the following enhancement ratios. These were used in the calculation of the necessary level of enhancement to offset the habitat disturbed by Project construction on lands managed by the BLM and for the enhancement of the resources and values for which the BOPNCA was designated.

National Energy Corridors were established that cross the BOPNCA, which the RMP acknowledges and memorializes as utility corridors in the RMP. Locating utilities within these corridors is consistent with the RMP and with the enabling legislation for the BOPNCA and therefore should require no additional enhancement to be consistent with the enabling legislation. One of the reasons the corridors were established in these locations was that they had minimum impact on the BOPNCA. Another was that they largely cross disturbed vegetation—sagebrush and grassland habitat invaded by cheatgrass, which in some cases has resulted due to fires.

The Companies propose to compensate for impacts using the following ratios against the construction disturbance footprint:

Within designated utility corridors on BLM-managed Public Lands:

- 1:1 ratio for impacts to presently undisturbed ecological sites within the BOPNCA; and
- 0.5:1 ratio for impacts to presently disturbed ecological sites within the BOPNCA.

Outside designated utility corridors on BLM-managed Public Lands:

- 2:1 ratio for impacts to presently undisturbed ecological sites within the BOPNCA; and
- 1:1 ratio for impacts to presently disturbed ecological sites within the BOPNCA.

The Companies believe it is important to recognize the baseline condition of the ecological sites crossed by the Project. Where those areas have already been degraded and have crossed a threshold that will make restoration to “climax” vegetation extremely unlikely, the ratios offered are less. Where the project will impact some of the relatively rare remaining undegraded vegetation, the risks of that vegetation being invaded from adjacent land uses by cheatgrass or other noxious weeds is higher, and the ratio of funding for off-site intensive restoration projects should be higher.

Temporary project impacts will be restored to previous conditions to the extent practicable and in accordance with the Project Reclamation Plan. The Companies acknowledge that reclamation will require several years before it is successful. In order to address the temporary loss of fully functional habitat while the reclaimed areas rejuvenate and mature, the Companies therefore offer the above enhancement ratios based on **construction** impacts on BLM-managed Public



Lands within the BOPNCA, which provides over *ten times* the enhancement acres over using the operational impact estimate. Using the construction footprint estimate thereby substantially increases the proposed enhancement within the MEP.

## 6.0 ENHANCEMENT PORTFOLIO PROPOSAL

This section is based on project types and estimated costs for the Proposed Routes for Segments 8 and 9. This basis is used because these routes cross through the BOPNCA for several miles and are likely to have the largest impact on the BOPNCA. Other routes, including the BLM preferred alternative as presented in the Final EIS, impact much less of the BOPNCA. The project types used within this Draft MEP to determine appropriate levels of funding for enhancement and to address the enabling legislation, for which the BOPNCA was established, include habitat restoration, law enforcement, visitor enhancement, property purchase, removal of existing power lines and associated facilities, and a management fund (refer to Section 6.1). The Companies propose to scale the habitat restoration, law enforcement, property purchase, and visitor enhancement components of this Draft MEP based on the acreage of construction impact on the BOPNCA of the routes approved. The Companies offer removal of portions of two Idaho Power existing lines within the BOPNCA regardless of alternative chosen. The Companies also offer management funding of \$50,000 a year for 20 years, which is also a fixed amount regardless of alternatives for both Segments 8 and 9 selected. Please see Sections 6.1.5 and 6.3 for additional discussion.

The following discussion of project types and activities was developed using input from BLM staff, information from the Final EIS, the BOP RMP, enabling legislation, and NLCS manuals. The project types and mix were developed to demonstrate that enhancement could be accomplished and would be of sufficient quality and quantity to allow routes through the BOPNCA and to identify the maximum financial contribution from the Companies. One of the key features of the MEP is the development of an Oversight Committee (Section 6.2.2). The Oversight Committee would be responsible for reviewing proposed projects and addressing the following:

- Funded projects are consistent with the projects described below; however, project types and mix can change from those described below (agreed upon funding will be made available based on the ratios, estimated costs, and acres of construction impact, not upon the type and/or mix of projects finally selected by the committee).
- Methods, success criteria, monitoring, etc. are sufficiently detailed prior to funding any habitat restoration project and are appropriate for the conditions in the BOP. The Oversight Committee may include adaptive management as part of a habitat restoration project.
- Habitat restoration projects take advantage of natural and man-made fire breaks or incorporate newly-created fire breaks where practicable.
- Habitat restoration projects may incorporate research, but the primary purpose of the project is to restore habitat to support raptor prey species.
- Coordination with current and future BLM-funded and implemented projects within the BOPNCA will occur to maximize funding and project extent.

### 6.1 Project Types

Based on discussions with the BOPNCA Manager and other BLM staff, the Companies propose the following general outline, approaches and proposed project mix, regardless of route:

1. Habitat restoration (60% or more)
2. Purchase of high-priority private inholding (approximately 104 acres)
3. Law Enforcement
4. Visitor Enhancement (approximately 10%)
5. Removal of an existing line and substation

Note that these project types were selected to allow for an estimate of the total fund value, not to restrict the BLM or the Oversight Committee in the use of the funds to just these project types or in this proportion. The Companies expect that the Oversight Committee will be given the opportunity to determine the best project mix at the time of implementation, and to manage adaptively based on the success of early projects.

Costs are estimated based on information provided by the BLM, in the cases of habitat restoration, law enforcement, and visitor enhancement. The case of the property purchase was determined by recent market transactions. These costs and this level of enhancement were based on the estimated amount of disturbance, both temporary and permanent, caused by the Project as proposed. They are also based on the ratios of disturbance acres to enhancement acres provided in Section 5.4. Additional details on how the fund would be financed and managed are found in Section 6.2, below. Appendix B provides details on the calculations based on the disturbance “footprint” of construction and operation. Though Appendix B now addresses only the BLM Preferred and the Companies’ Proposed Routes, the impacts of other routes could also be calculated and fund values estimated if needed.

### **6.1.1 Habitat Restoration**

#### **6.1.1.1 Proposal**

There are many opportunities for habitat restoration in the BOPNCA. Two of the most important restoration activities are the conversion of non-native grasslands to native perennial plant communities and noxious weed control. These restoration projects target the enhancement of habitat for prey species for raptors.

As detailed in the RMP, grazing is permitted within the BOPNCA but the livestock often have adverse impacts to riparian areas. Projects that work with grazing permittees to fence spring and immediate contributing areas from livestock and to develop alternate, off-site watering facilities for livestock would also substantially contribute to restoration and enhancement of riparian areas.

#### **6.1.1.2 Cost Estimate**

The BLM’s estimated average cost of habitat restoration within the BOPNCA through utilizing smaller-scale intensive treatments is \$1,500 per acre. Through discussion with the BOPNCA manager and based on the Companies’ experience, the average success rate of such projects is approximately 80 percent. In order to address the risk of project failure and the need to conduct additional measures, the Companies will provide additional compensatory mitigation of \$300 per acre totaling \$1,800 per acre for habitat restoration, which accounts financially for the 20 percent failure rate. Based on preliminary estimates of the construction footprint for the Proposed Routes for Segments 8 and 9, the total for direct funding of habitat restoration is estimated at \$2,526,660.

### **6.1.1.3 Effectiveness**

The proposed habitat restoration techniques have been implemented over the last several years in the BOPNCA. Based on the success of these intensive restoration techniques, the Companies assume that these techniques are effective in restoring natural vegetation. However, the Companies realize that the success rate of these projects is not 100 percent. Through discussion with the BOPNCA manager and based on the Companies experience, the average success rate of such projects is approximately 80 percent. The Companies have taken this explicitly into account in estimating the overall cost per acre. Thus the Companies' estimated cost assumes that full effectiveness in transforming areas with invasive species such as cheat-grass to native vegetation can be achieved over time with a need to repeat treatments on 20 percent of the acreage.

The BOPNCA RMP, Section 2.3 (page 2-3) states "The greatest benefit to raptors is the stabilization of raptor prey populations, most notably the Piute ground squirrel. To stabilize and increase the small mammal prey base, remnant upland native shrub habitat must be preserved, inter-connected, and expanded. Restoring degraded areas to shrub/bunchgrass habitat with a forb component and biological soil crust provides additional habitat for small mammals, invertebrates, lizards, snakes, and birds." In accordance with the RMP, habitat restoration projects should be located in areas where it is most beneficial to raptor prey populations, rather than focusing on currently burned areas and seed / plant mixes should include shrubs that are suitable for small mammals. Therefore, appropriately focused habitat restoration projects will assist with the stabilization of raptor prey populations thereby benefiting raptors long-term.

## **6.1.2 Property Purchase**

### **6.1.2.1 Proposal**

The majority of the significant cultural resources within the BOPNCA are found in the canyon itself and are largely historic and precontact-era Native American archaeological sites, with some additional historic sites, including a historic bridge.

While important resources have been identified on BLM lands, many more are likely located on private land, given the landforms and proximity to the river of private lands within the canyon. These sites could be much better documented and preserved under BLM management. According to BLM staff, there are one or more parcels, surrounded by BLM lands, with substantial cultural and natural resource values within the canyon. Once purchased and deeded to the United States, this land could be managed together with adjacent BLM lands and would not require additional funding for separate management.

While the Project will not have a direct effect on the Guffey Butte–Black Butte Archaeological District, the Proposed Routes included herein may have other impacts on cultural resources within the BOPNCA. Therefore, the Companies propose to provide funding for the purchase, transaction fees, and ownership transfer of lands to the BLM for management in perpetuity as one element of this MEP.

### **6.1.2.2 Cost Estimate**

The estimated cost of purchasing this land is unknown but is estimated at no more than \$3,000 per acre, including transaction fees. Alternatively, the BLM could pursue conservation easements on one or more parcels at a lesser price per acre. The Companies therefore propose to

offer \$320,000 to the BLM to complete the purchase of one or more important parcels, the actual application of which would be determined by the Oversight Committee, if the Proposed Routes are approved.

### **6.1.2.3 Effectiveness**

The staff of the BOPNCA has identified private parcels, inholdings within the NCA, that likely contain important cultural resources as well as important habitat for raptors and their prey species. The Companies assume that moving these parcels into BLM management, when coupled with other mitigation and enhancement projects, will protect the existing cultural resources and will protect and ultimately enhance the habitat values of those lands. Because the Companies defer to an Oversight Committee on the selection of the parcels and the determination of fee or conservation easement purchases, a more complete estimate of effectiveness cannot be made.

The BOPNCA RMP, Section 2.2 (page 2-2) states “Acquire lands that contain significant natural or cultural resources as opportunities arise.” Furthermore, the RMP, in Section 2.11 (page 2-15) states “As opportunities arise, acquire scattered State and private lands within the NCA to improve management.” This measure will help the BLM meet these management actions as well as others identified in the RMP. Conservation of such lands will not only conserve and protect cultural resources but will also conserve and protect any habitat therein used by birds of prey and their prey base.

## **6.1.3 Law Enforcement**

### **6.1.3.1 Proposal**

In conversation with the BLM, law enforcement, particularly with regards to inappropriate public use, is a critical part of successfully managing the BOPNCA. The Companies recognize the importance of longer-term funding for law enforcement, since changing public perception and behavior can take years of focused efforts, including increased patrols, public service messages using various media, school-based education programs, etc.

### **6.1.3.2 Cost Estimate**

Based on an estimate provided by staff of the BOPNCA, the Companies assume that a fully equipped law enforcement officer costs the BLM \$140,000 annually per full-time equivalent (FTE), which includes costs for training, equipment, weapons, vehicle, etc. The Companies have already offered ¼ FTE of law enforcement (\$35,000 annually) for 10 years to compensate for indirect effects of additional roads for their modified Proposed Routes (mitigation). In addition, as part of the MEP, the Companies are offering ¾ FTE for the first 10 years (\$105,000 annually) and ½ FTE for the following 10 years (\$70,000 annually) or \$1,750,000 over 20 years as part of the MEP for the Proposed Routes.

### **6.1.3.3 Effectiveness**

BOPNCA staff have provided evidence that focused law enforcement efforts can change the behavior of visitors even in the absence of law enforcement personnel. The Companies assume that a similar focus in law enforcement to change behavior, not just to punish inappropriate behavior, when coupled with signage and education programs, can be highly effective in reducing illegal activities like dumping and explosive target shooting within the BOPNCA.

Therefore it is reasonable to assume that a long-term investment in public education as carried out by a focused law enforcement effort (between mitigation and enhancement proposals, a full FTE over 10 years, then half an FTE over an additional 10 years) would be highly effective, not only in preventing the increase in illegal behavior perhaps encouraged by the presence of new roads associated with the Project, but also in permanently reducing illegal behavior in the BOPNCA, thereby further protecting the objects and values for which the NCA was established.

#### **6.1.4 Visitor Enhancement**

##### **6.1.4.1 Proposal**

Through discussion with Patricia Roller, informing and educating the public regarding the natural resources and values of the BOPNCA and enforcing the management rules would further enhance the objects and values of the BOPNCA and the public experience.

There are many opportunities for enhancement of visitor experiences within the BOPNCA. For example, the funding could be used to assist with funding of the “Raptor Camp,” which provides opportunity for the public and local youth to learn of the values of and natural resources within the BOPNCA, including cultural significance of the area. Another possible use of funds would be to further educate the public and promote responsible use of the BOPNCA through the development of public service announcements and educational materials specifically addressing law enforcement issues, such as discouraging the use of exploding targets, in order to raise public awareness. Other uses include cultural resource education and outreach, visitor education materials such as displays, videos, and brochures, and funding for other ongoing visitor programs. The Companies encourage the Oversight Committee to consider educational programs focused on youth in the area and explore opportunities of long-term education and outreach with the community to continue to involve the community with the management and conservation of the BOPNCA. The Oversight Committee would be responsible for a selection of projects.

##### **6.1.4.2 Cost Estimate**

Support for this element is estimated at \$50,000 per year for 10 years, for a total of \$500,000 if the Companies’ Proposed Routes are approved.

##### **6.1.4.3 Effectiveness**

Based on the experience of the BOPNCA staff, visitor enhancement programs that focus on youth and those that model and encourage appropriate use of the NCA have been effective in reducing inappropriate behavior and in educating the next generation in appreciation of the unique values of the NCA.

#### **6.1.5 Line and Substation Removal**

##### **6.1.5.1 Proposal**

##### **Swan Falls to Bowmont**

Idaho Power Company (Idaho Power) has identified a portion of an existing transmission line within the BOPNCA that can be removed. The existing Swan Falls to Bowmont transmission line is a 46-kV line that is authorized by BLM ROW grant I-16259. The line occurs within a 40-foot-wide ROW and crosses approximately 10.8 miles of public lands managed by the BLM (Figure 3). Idaho Power would remove approximately seven miles of line on BLM-managed



lands, including all structures (although structures may remain if requested by BLM), from the Bowmont Substation to Gage Substation. Idaho Power would continue to use the existing line from the Gage Substation to Ferry Substation to serve its customers. Idaho Power will construct an approximately 1-mile-long section to connect the remaining portion of the line to the Idaho Power system. It is expected that the new construction will occur on private land. In addition, approximately 3.9 miles of existing 12.5 kilovolt lines, including 0.25 mile on BLM lands, will be re-constructed. Further, approximately 4 miles of the existing 46-kV line on existing BLM ROW between the Gage and Ferry substations would need to be converted to a 12.5-kV distribution line. This will require a neutral conductor to be strung on the existing structures and may require structure replacements. Idaho Power is also proposing to remove the existing Gage Substation and associated equipment/apparatus. The Gage substation is on BLM managed land.

### **Mountain Home to Bennet**

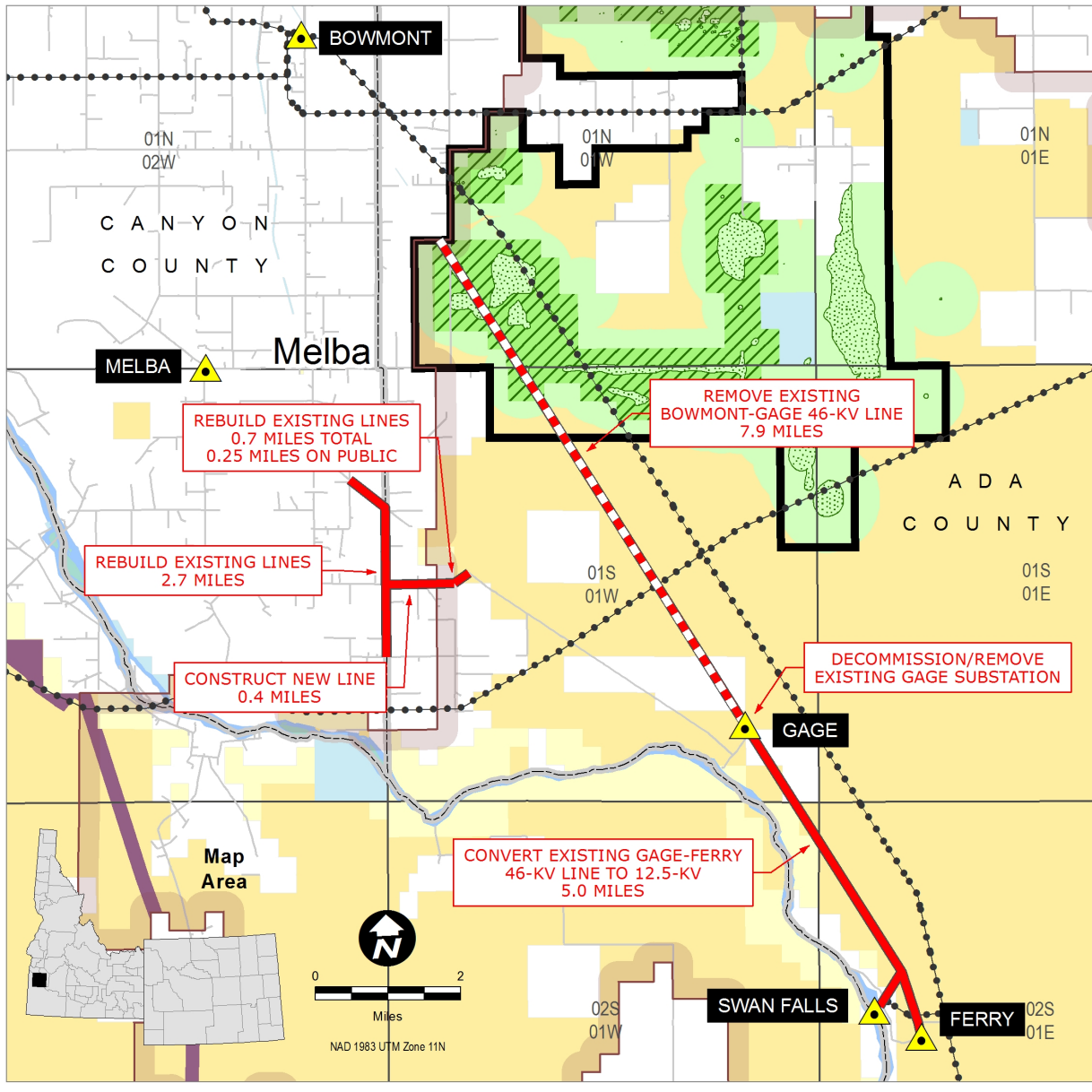
Idaho Power Company has identified a portion of an existing transmission / distribution line within the BOPNCA that can be removed. The existing Mountain Home to Bennett transmission line (Line 210) is a 69-kV line with distribution underbuild (Figure 4). The 5.6 miles of the line on the BOPNCA without any distribution underbuild would be removed including all structures (although structures may remain if requested by the BLM). Idaho Power will continue to use the remaining portion of the line to serve customers. Idaho Power will also reconstruct approximately 2.2 miles of the existing feeder connection for the Saylor Creek (Glenns Ferry), all of which is on private lands. Idaho Power will conduct maintenance on the remaining portion of the line; this would be determined as part of the engineering analysis to support the removal.

#### **6.1.5.2 Cost Estimate**

The cost to the Companies to implement the removal and reconnection activities as described, is currently estimated at \$1,922,000 for both the Swan Falls to Bowmont and the Mountain Home to Bennet lines.

#### **6.1.5.3 Effectiveness**

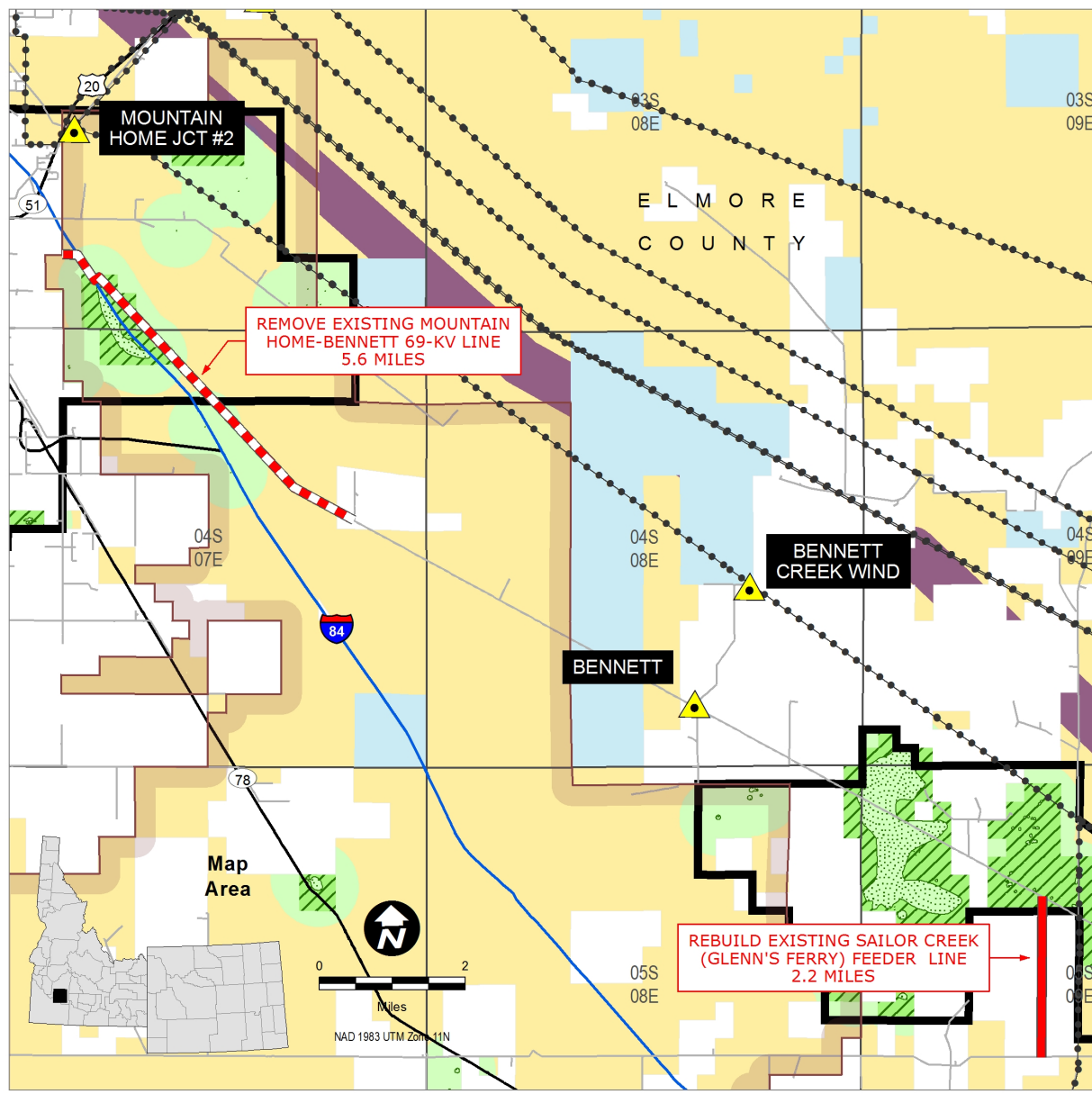
Removal of these portions of line would decrease the current disturbance footprint within the BOPNCA and address two concerns that have been raised regarding the Project and resources in the BOPNCA; removal of existing infrastructure to enhance raptor habitat and protection of slickspot peppergrass and its habitat. As shown on Figure 3, the northern portion of the line on BLM-managed lands crosses through identified slickspot peppergrass element occurrences and a BLM management area. Removal of the line and structures would negate the need for operations and maintenance in the area and eliminate potential impacts to slickspot peppergrass from Idaho Power activities. Idaho Power would rehabilitate disturbed areas following removal of the section of line and maintenance on the remaining portion of the line in accordance with the Project Reclamation Plan.



Sources: Idaho Power, BLM, ESRI, Ventyx

IPC\_Rebuild Remove\_Gage-Ferry\_20140730 Scott.Flinders 8/7/2014

**Figure 3.** Proposed Swan Falls to Bowmont Transmission Line Modifications



#### Legend

- New or Rebuild Existing Line
- - - Remove Existing Line
- Existing Transmission Line
- Existing Distribution Line
- ▲ Substation
- West-wide Energy Corridor (WVEC)

- Morley Nelson Snake River Birds of Prey NCA
- Critical Habitat
- Occupied Habitat (BLM only)
- Elemental Occurrence
- Management Area (BLM)

- Land Status**
- Bureau of Land Management
- Bureau of Reclamation
- Private
- State Land

Sources: Idaho Power, BLM, ESRI, Ventyx

IPC\_Rebuild Remove\_Bennett\_20140730 Scott.Flinders 8/7/2014

**Figure 4.** Proposed Mountain Home to Bennet Transmission Line Modifications

In the event the BLM would request that one or more structures be in place (conductor and hardware would be removed leaving any cross arms in place) and agree to take responsibility of maintaining those structures, the Companies would not remove the identified structures in order to provide continued perching and nesting opportunities to birds of prey.

Through discussions with the Boise RAC subcommittee, the Companies acknowledge this Committee's desire to strategically install nesting platforms to further enhance nesting opportunities for birds of prey. The Companies have not included this as an element of the Portfolio at this time because an agreement on advisability and placement must be reached with the USFWS and with BLM. The Oversight Committee may then elect to fund the installation of nest platforms on structures left in place as one of the selected enhancement projects. The installation of any nest platform must take into consideration current nesting and perching opportunities as well as the potential impact to the Companies regarding ability to maintain infrastructure within the BOPNCA. The Companies would expect to coordinate with the Oversight Committee regarding appropriate nest platform locations.

## **6.2 Portfolio Fund**

The Companies intend to fully fund the agreed MEP, and to do so by providing the full amount to the BLM or to an approved third-party fund manager with a one-time payment for each Segment. The Companies anticipate that the fund manager will prudently invest the funds to add value to the funds and to provide for even more opportunities for enhancement for the BOPNCA. However, the value of the fund is calculated without assuming accumulation of any interest.

### **6.2.1 Management Fund**

The funding will cover the direct costs of restoration projects, property purchase, law enforcement, and visitor enhancement programs. It will also include management funding, which is intended to provide sufficient funding for annual costs such as monitoring, reporting, and administration of the fund and the Oversight Committee (Committee). The management funding will also cover the cost of administering the mitigation and enhancement fund itself, which may be accrued by a third party fund administrator.

The intent of the management fund is to provide sufficient funding to support needed monitoring, reporting, and administration of the MEP. The Companies estimate that total monitoring, reporting, and administration costs will not exceed \$50,000 per year for 20 years and offer a total of \$1,000,000 regardless of which routes are approved but assuming both Segment 8 and 9 are approved.

### **6.2.2 Basis for Funding**

The Companies assert that the requirement for funding additional mitigation and enhancement programs for the BOPNCA be considered as proportional to the impact of the route ultimately approved for construction, with two important exceptions. The Companies' offer of the two line removals and the offer of a \$1,000,000 management fund are independent of alternatives selected, provided that both Segment 8 and 9 are approved. Note that federal policy regarding mitigation has always required that compensatory mitigation be proportional to impact, and the companies expect this policy to be followed in the acceptance of the MEP.

The Companies are not experts in any of the proposed projects with the exception of the line removals. The Companies will take full responsibility for execution of the agreed line removals

with BLM oversight for compliance with agreed EPMs and Environmental Protection Plans. However, the Companies do not plan to execute any of the other projects within the BOPNCA. Instead, they propose to provide funding to the BLM for these projects. Since BLM is to execute the projects with the guidance, monitoring, and reporting of the Oversight Committee, the Companies expect the BLM to also be responsible for the execution. This means that the BLM will utilize adaptive management and continually evaluate the success of projects. Because the value of the MEP has been established proportional to impact and because the BLM will be responsible for execution, the Companies will be responsible for the full agreed-upon value of the MEP but will not be liable for any further costs associated with this MEP beyond the agreed value of the fund.

The mechanism of providing said funding will be determined at a later date through coordination with the BLM, based on the mechanisms available to the Companies as regulated utilities, and may include a third party fund manager.

#### **6.2.2.1 Timing for Funding**

Through development of this MEP, the Companies commit to providing funding, commensurate with acres occupied and impacted by Project facilities, to forward the “conservation, protection and enhancement of raptor populations and habitats and the natural and environmental resources and values associated therewith” for which the BOPNCA was created. The Companies will provide a proportional amount of the total, based on federally managed lands within the BOPNCA crossed by the approved routes by segment, as a term and condition of receiving a NTP. For Proposed Segment 8, 28 percent would be provided prior to issuance of an NTP for Segment 8. For Proposed Segment 9, 72 percent of the amount would be provided prior to issuance of an NTP for Segment 9. These percentages are based on the number of miles crossed for each segment. The Companies may request the NTP for each Segment separately and propose this means of recognizing the relative impact of the two segments. The intent is to provide the full amount of the funding for both Segments as their construction is imminent. Percentages would vary if other routes were authorized.

#### **6.2.2.2 Fund Value for Proposed Routes**

As specified in the project descriptions in Section 6.1, the fund value for the RAC-Recommended Routes is summarized in Table 9, below.

Additional details are found in Appendix B, where assumptions for each project type are specified.

**Table 9.** MEP Fund Value for Proposed Routes for Segments 8 and 9

Project Type	Mitigation Component	Enhancement Component	Totals
Habitat Restoration	\$174,780	\$2,526,660	<b>\$2,701,440</b>
Property Purchase	NA	\$320,000	<b>\$320,000</b>
Law Enforcement	\$350,000	\$1,750,000	<b>\$2,100,000</b>
Visitor Enhancement	NA	\$500,000	<b>\$500,000</b>
Management Fund	Covered under enhancement	\$1,000,000	<b>\$1,000,000</b>
Line Removal	NA	\$1,922,000	<b>\$1,922,000</b>
<b>Subtotal by Component</b>	<b>\$524,780</b>	<b>\$8,018,660</b>	<b>\$8,543,440</b>

### 6.2.2.3 Fund Value for Final EIS BLM-Preferred Alternatives

The BLM-Preferred Alternatives have far less impact on the BOPNCA than the Companies' Proposed Routes. Based on the miles crossed, the Final EIS Preferred Alternatives have about 20 percent of the impact of the Proposed Routes. Therefore, the fund value for those alternatives is substantially less, in proportion to impact. The management fund and the offer of removal of lines remains the same provided both Segments 8 and 9 are approved. Table 10, below, summarizes the fund value by component for the Final EIS BLM-Preferred Alternatives.

**Table 10.** MEP Fund Value for BLM-Preferred Routes for Segments 8 and 9

Project Type	Mitigation Component	Enhancement Component	Totals
Habitat Restoration	\$64,800	\$709,200	<b>\$774,000</b>
Property Purchase	NA	\$64,000	<b>\$64,000</b>
Law Enforcement	\$70,000	\$350,000	<b>\$420,000</b>
Visitor Enhancement	NA	\$100,000	<b>\$100,000</b>
Management Fund	Covered under enhancement	\$1,000,000	<b>\$1,000,000</b>
Line Removal	NA	\$1,922,000	<b>\$1,922,000</b>
<b>Subtotal by Component</b>	<b>\$134,800</b>	<b>\$4,145,200</b>	<b>\$4,280,000</b>

### 6.2.3 Oversight Committee

The Companies propose the establishment of an Oversight Committee (Committee) that will provide guidance and oversight for the management and implementation of the fund.

#### 6.2.3.1 Committee Composition

The Companies will work with the BLM to determine a broad stakeholder base for the Committee. Preliminary considerations for membership could include:

- BLM Director of BOPNCA (chair)
- Representative from Boise State University Raptor Research Center
- Representative from the Idaho Governor's Office of Species Conservation



- Representative from the Idaho Department of Fish and Game
- Representative from counties crossed by the proposed routes
- Representative from one or more involved NGOs (Peregrine Fund, Hawks Unlimited, Audubon Society, etc.)
- Representative from the Great Basin Consortium
- Representative from NRCS

#### **6.2.3.2 Committee Responsibilities**

- **Committee Governance:** The Committee will identify governance rules that include, but are not limited to, the following:
  - How requests to participate from groups/individuals not initially identified will be evaluated and addressed.
  - How decisions will be made (e.g., by majority or consensus).
  - How and when to solicit project proposals and criteria that will be used to evaluate proposals.
  - How often and where to meet.
  - Responsibility for preparing annual and five-year reports.
- **Project Selection:** While the fixed funding amount in this MEP was developed from a preliminary list of likely projects, the Committee will have the responsibility and authority to determine the actual funding allocation (project mix) and types of projects. If project types vary from those considered in this MEP, they must be consistent with the intent of the MEP and must be related to Project-related impacts.
- **Implementation Oversight:** The Committee will be responsible for providing oversight of the implementation of projects and for assuring that the funding is used as intended and is properly documented.
- **Oversight of Monitoring and Reporting:** The Committee will also be responsible for assuring that the projects funded through this MEP are successful, and that appropriate monitoring and reporting are conducted. Reports should be available to the public as well as to the Companies as completed.
- The Committee will be responsible for ensuring that selected projects have considered, and are designed for, long-term sustainability. For example, habitat restoration projects should include contingencies to address noxious weeds, fires (e.g., recovery and/or fire breaks), etc.

#### **6.2.3.3 Committee Administration and Compensation**

The Companies anticipate that the Committee will need to meet a maximum of two times per year and that most if not all meetings can be conducted by webinar or telephone conference. The Companies expect that management funding will include a component of compensation for Committee members requesting compensation and to cover the costs of the organization and management of the Committee over the life of the restoration projects. The Companies further assume that all restoration projects will be implemented within 5 years following the completion

of construction and will achieve success within 20 years after completion of construction of the Project.

## **6.3 Monitoring and Reporting**

### **6.3.1 Monitoring and Reporting for Project-wide Mitigation**

This MEP specifically addresses *additional* mitigation and enhancement projects and activities, over and above the considerable commitment the Companies have already made to Project-wide avoidance, minimization, reclamation, and compensatory mitigation. However, the MEP does not relieve the Companies of their obligations under Project-wide environmental protection measures and plans. Environmental Protection Measures and Environmental Protection Plans will be applicable as appropriate throughout the BOPNCA. Those measures and Plans call for monitoring and reporting for which the Companies are responsible, though much of the monitoring and reporting will be conducted through a third-party compliance inspection contractor (CIC; See the Environmental Compliance and Monitoring Plan and other relevant plans already submitted and approved as part of the Project (BLM 2013 ROD)).

### **6.3.2 Monitoring and Reporting for Line and Substation Removal**

The Companies will be responsible for routine environmental compliance, which includes monitoring and reporting during construction as well as post-construction monitoring and reporting of reclamation, during line and substation removal and associated reconstruction of existing lines. Environmental Protection Plans developed for the Project will be applicable (see the Environmental Compliance and Monitoring Plan, Reclamation Plan, Noxious Weed Plan, SWPP Plan, and other relevant plans already submitted and approved as part of the Project [BLM 2013 ROD]).

### **6.3.3 Monitoring and Reporting for BOPNCA-Required Additional Mitigation and Enhancement**

The Companies anticipate that the use of the funding proposed herein will be accompanied by a rigorous program of monitoring and reporting. As proposed, the Committee will be responsible for determining the methods and timing of monitoring and reporting for each project funded, including restoration, property purchase, law enforcement, visitor enhancement, and any other projects funded.

In particular, the Companies anticipate that each restoration project recommended for funding to the Committee should present expected future conditions and criteria for determining success and be accompanied by a monitoring and reporting plan. The level of monitoring and reporting and success criteria may differ from project to project. The Committee maintains the flexibility of establishing and requiring appropriate monitoring and reporting and success criteria commensurate with the project that the Committee has elected to fund. The projects funded by the Committee would be treated as any other mitigation project in this regard. The Committee will be responsible for determining the entity or entities responsible for implementing the project and for its monitoring and reporting as well as funding to address potential for project failure. The value of Management Funding, discussed above, includes the cost of monitoring and reporting. It is expected that an overall monitoring report would be prepared for all projects so funded annually for the first 5 years, followed by a summary report every 5 years thereafter for 20 years. Monitoring reports would be made public and copies provided to the Companies.

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**APPENDIX A  
APPLICABILITY OF ENVIRONMENTAL PROTECTION PLANS  
AND MEASURES TO THE BOPNCA**

Table 1 describes the Environmental Protection Plans (EPPs) that the Companies will use to ensure environmental protection during construction, operation, and maintenance. All EPPs are stand-alone documents that contain complete lists of all Environmental Protection Measures (see Table 2) and other specific stipulations and methods for that environmental resource. The management plans and plan methodologies have been developed jointly by the Companies and the BLM with input from the USFS and other cooperating agencies. The Companies will be responsible to ensure their contractors and employees follow these plans. EPPs which apply to Morley Nelson Snake River Birds of Prey National Conservation Area (SRBOP or NCA) are identified.

**Table 1**

**Environmental Protection Plans Applicable to the Morley Nelson Snake River Birds of Prey National Conservation Area**

<b>EPP Description</b>	<b>Appendix Designation (POD)</b>	<b>Applicable to SRBOP</b>
The <b>Environmental Compliance Management Plan</b> is the primary guidance document that states how the Companies uphold, document, and manage compliance with the ROW grant, the POD, landowner agreements, and all federal, state, and local permits. It is a centralized Project environmental compliance reference and is thereby intended to facilitate environmental compliance across the entire Project.	Appendix C	Yes
The <b>Framework Reclamation Plan</b> includes construction mitigation, reclamation, and revegetation measures for each land management area crossed by the ROW within BLM-managed and National Forest lands. It will combine the Companies' best management practices (BMPs) with site-specific mitigation developed in consultation with agencies. Some measures will apply Project-wide, while others will be designed for specific areas.	Appendix D	Yes
The <b>Framework Noxious Weed Plan</b> provides methods to control the potential occurrence/infestation of noxious and invasive weeds during and following construction of the Project. The purpose of the plan is to ensure noxious weeds are identified and controlled during the construction of Project facilities and all federal, state, county, and other local requirements are satisfied.	Appendix E	Yes
The <b>Framework Stormwater Pollution Prevention Plan</b> includes measures for temporary and permanent erosion and sediment control that will be used during construction, operation, and maintenance of the transmission line and ancillary facilities.	Appendix F	Yes



## Environmental Protection Plans and Documents (continued)

Description	Appendix Designation (POD)	Applicable to SRBOP
The <b>Framework Spill Prevention, Containment, and Countermeasures Plan</b> includes measures for spill prevention practices, requirements for refueling and equipment operation near waterbodies, procedures for emergency response and incident reporting, and training requirements.	Appendix G	Yes
The <b>Plant and Wildlife Conservation Measures Plan</b> presents the measures proposed by the Companies for avoidance and minimization of impacts to plant and wildlife species as related to construction activities for the Project and outlines specific conservation measures to be implemented in the event that state or federally listed species, BLM sensitive species, or USFS special status species or their habitats are identified within or adjacent to the Project ROW.	Appendix H	Yes
The <b>Framework Stream, Wetland, Well, and Spring Protection Plan</b> provides measures to protect these resources from potential impacts during construction, operation, and maintenance activities. The goals of this plan are to control Project-related erosion and sedimentation into streams and wetlands, minimize disturbance and erosion of streambeds and banks, and protect springs and wells in the Project area from impacts due to blasting and hazardous materials contamination.	Appendix I	Yes
The <b>Framework Paleontological Resources Protection Plan</b> identifies the mitigation measures needed to avoid or reduce Project-related impacts to paleontological resources, wherever feasible. This plan provides important background and contextual information useful for the paleontological resources mitigation program.	Appendix J	Yes
The <b>Agricultural Protection Plan</b> includes measures intended to mitigate or provide compensation for agricultural impacts that may occur due to construction of the Project. The measures are intended to be implemented on partially or wholly owned private agricultural land unless directed otherwise by the landowner.	Appendix K	No
The <b>Framework Traffic and Transportation Management Plan</b> includes measures that require compliance with federal policies and standards relative to planning, siting, improvement, maintenance, and operation of roads for the Project.	Appendix L	Yes
The <b>Framework Blasting Plan</b> outlines methods to prevent adverse impacts to human health and safety, property, and the environment that could potentially result from the use of explosives during Project construction and mitigate risks and potential impacts associated with blasting procedures that may be required for construction.	Appendix M	Yes
The <b>Framework Erosion, Dust Control and Air Quality Plan</b> provides measures to ensure protection of the air quality that will be affected by the Project. This plan is to be implemented during the construction, operation, and maintenance phases of the Project. These measures are intended to minimize dust and emissions from construction-related activities.	Appendix N	Yes

## Environmental Protection Plans and Documents (continued)

Description	Appendix Designation (POD)	Applicable to SRBOP
The <b>Framework Fire Prevention and Suppression Plan</b> includes measures to be taken by the Companies and their contractors to ensure that fire prevention and suppression measures are carried out in accordance with federal, state, and local regulations. The plan addresses the specific requirements of the USFS and BLM and provides BMPs for fire management on privately owned lands.	Appendix O	Yes
The <b>Framework Hazardous Materials Management Plan</b> reduces the risks associated with the use, storage, transportation, production, and disposal of hazardous materials (including hazardous substances and wastes). This plan identifies Project-specific mitigation measures and other specific stipulations and methods to address spill prevention, response, and cleanup procedures for the Project.	Appendix P	Yes
The <b>Framework Construction Emergency Preparedness and Response Plan</b> provides an overview of methods to be implemented if the need for emergency management is imminent. This document will describe the existing support structure, chain of command, and emergency communications protocols.	Appendix Q	Yes
The <b>Operations, Maintenance, and Emergency Response Plan</b> includes measures to be employed while conducting routine, corrective, and emergency operations and maintenance activities. Measures identified are in compliance with applicable state and federal laws and policies; and will ensure consistency across and within federal jurisdictions; allowing for the Companies to access the transmission line and ancillary facilities in a timely, cost effective, and safe manner.	Appendix R	Yes
The <b>Cultural Resources Protection Plan</b> identifies the mitigation measures needed to avoid or reduce Project-related impacts to cultural resources, wherever feasible. This plan provides important background and contextual information useful for the cultural resources protection program and appends the Programmatic Agreement (PA), Project-wide Historic Properties Treatment Plan (HPTP), Monitoring Plan, Inadvertent Discovery Plan, and Native American Graves Protection and Repatriation Act (NAGPRA) Plan of Action.	Appendix S	Yes
The <b>Preconstruction Checklist</b> identifies when specific actions related to completion of plans are to take place as well as when Contractor-secured permits are to be applied for.	Appendix T	Yes
The <b>Framework Flagging, Fencing, and Signage Plan</b> describes the methods that will be used in the field to delineate limits of disturbance and protect sensitive environmental and cultural resources during Project construction.	Appendix U	Yes
<b>PacifiCorp's Transmission Construction Standards</b> provides standards for all aspects of transmission line construction.	Appendix V	Yes
<b>PacifiCorp's Transmission and Distribution Vegetation Management Program Specification Manual and Idaho Power Company's Transmission Clearing Specifications and Framework for Managing Noxious Weeds</b> cover the vegetation management programs for both distribution and transmission. They include program descriptions, specifications, and protocols.	Appendix W	Yes

Environmental Protection Plans and Documents (continued)

Description	Appendix Designation (POD)	Applicable to SRBOP
The <b>Land Description of Project Components on Federally Managed Public Lands</b> provides an Aliquot part subdivision down to the quarter-quarter section for the transmission line ROW, regeneration stations, substations, permanent and temporary access roads, and temporary multipurpose areas and fly yards.	Appendix X	Yes
<b>Other Information</b> includes Project documents such as the Biological Opinion and permits that have been issued.	Appendix Y	Yes
The <b>Environmental Protection Measures</b> are a list of all EPMs to be implemented for the Project and are organized by resource to provide an easy reference document.	Appendix Z	Yes

**Table 2**  
**Environmental Protection Measures Applicable to the Morley Nelson Snake River Birds of**  
**Prey National Conservation Area**

<b>EPM Number</b>	<b>Environmental Protection Measures</b>	<b>Applicable to SRBOP</b>
<b>OPERATIONS AND MAINTENANCE</b>		
G-1	Resource Management Plan (as amended) design criteria, Best Management Practices (BMPs), and mitigation requirements will apply on BLM-managed lands.	Yes
G-2	Forest Plan Standards and Guidelines (as amended) will apply on National Forest System (NFS) lands. Ground-disturbing and vegetation management activities will comply with all Agency-wide, regional, and state BMPs.	Yes
G-3	Third-party Environmental Compliance Inspection Contractor (CIC) Monitors approved by the Agencies will monitor construction activities. Monitoring activities will be structured in accordance with the Environmental Compliance Management Plan included as Appendix C of the Plan of Development.	Yes
G-4	All wildlife and plant surveys/preconstruction surveys will be considered as “casual use” activities and will not be restricted or prevented to occur due to overlapping season and temporal restrictions.	Yes
OM-1	The Companies will comply with the road maintenance standards of the federal or state agency controlling the land.	Yes
OM-2	Roads will be maintained to have crossroad drainage in order to minimize the amount of channeling or ditches needed. Water bars will be installed at all alignment changes (curves), significant grade changes, and as requested by the federal or state agency.	Yes
OM-3	All access road drainage structures, constructed and installed for the Companies’ use only, will be maintained or repaired by the Companies during O&M activities or emergency response.	Yes
OM-4	Although routine and corrective O&M is of limited duration and impact, the Companies will attempt to adhere to specific closure periods and areas and are proposing not to conduct any routine and corrective O&M activities during the timeframes and at the locations identified in Appendix R of the Plan of Development to the greatest extent practical. The appropriate federal or state agency will notify the Companies of any spatial or temporal restrictions that are in effect for the Project area (e.g., fire restrictions) that would be applicable to corrective O&M activities.	Yes
OM-5	Existing improvements (fences, gates, etc.) will be repaired or replaced if they are damaged by O&M activities, as agreed to by the parties involved.	Yes
OM-6	The Agencies may restrict general public access to closed federal or state roads and access roads that the Companies maintain (the Companies will maintain access roads constructed for the Companies’ use only). In cases of restricted access, the Companies will physically close the road with a gate. Gates will be locked with both a lock supplied by the Companies and with a federal agency lock. Access management will be updated as necessary to reflect current road closures and gate locations.	Yes
OM-7	Any integrated vegetation management (IVM) control method, including those listed in Appendix R of the Plan of Development, may be used to control the growth of trees and tall shrubs to maintain clearances (the IVM recommended wire and border zones as indicated in Appendix R of the Plan of Development) and improve access to facilities.	Yes
OM-8	Any IVM control method including those listed in Appendix R of the Plan of Development may be used to control the growth of additional vegetation to maintain clearances, the IVM recommended wire and border zones as indicated in Appendix R, and improve access to facilities.	Yes
OM-9	Where possible, low-growing vegetation and small tree species within the right-of-way (ROW) that will not grow into the minimum required clearance distance will be left in place; trees may be removed on a subsequent maintenance cycle as they increase in size. Hazard trees are typically those trees or snags within or adjacent to the ROW that are likely to interfere with or fall into transmission lines or associated facilities. Hazard trees and other “hot spots” (high priority areas requiring vegetation management actions) are identified during routine line inspections and removed annually. In addition to hazard trees, other critical conditions that may require immediate attention include trees that interfere with transmission conductors and trees whose growth will not allow safe clearance until the next scheduled maintenance cycle.	Yes
OM-10	Any vegetation control method may be used for vegetation maintenance on access roads; this is typically scheduled at the same time as vegetation maintenance within the ROW. However, in cases where vegetation grows quickly, removal may occur annually. Vegetation that will not interfere with the safe operation of vehicles and equipment will be left in place.	Yes

EPM Number	Environmental Protection Measures	Applicable to SRBOP
OM-11	Slash will be lopped and scattered throughout the surrounding land. Stumps resulting from vegetation treatments will not be over 1 foot tall (unless the tree is not able to be safely cut at or below one foot from the ground surface), and lopped slash will be left as close to the ground as possible. Lopped slash will be a maximum of 18 inches in length for small trees and limb wood. If the federal land managing agency determines that fuel levels are unacceptable, they shall notify the Companies and develop a mutually agreed upon method to reduce fuels. This may include, but is not limited to, chipping.	Yes
OM-12	Hazard trees will be felled in a direction away from the ROW. Slash and limbs that fall within the ROW will be treated as described above; boles of trees greater than 8 inches will be left in place.	Yes
OM-13	Any chemical control will be done in accordance with any applicable local, state, and federal rules and regulations. Pesticides or other chemical control will be selected from the BLM and USFS lists of previously approved pesticides and in accordance with any pesticide plans. If the federal land managing agency determines that a previously approved pesticide and/or plan is unacceptable, they shall notify the Companies.	Yes
OM-14	Before beginning an O&M project on federal or state land, the Companies or their subcontractors will clean all equipment that will operate off-road or disturb the ground. Tracks, skid plates, and other parts that can trap soil and debris will be removed for cleaning when feasible, and the entire vehicle and equipment will be cleaned at an off-site location.	Yes
OM-15	To help limit the spread and establishment of noxious weed species in disturbed areas, desired vegetation needs to be established promptly after disturbance. The Companies will rehabilitate significantly disturbed areas as soon as possible after ground-disturbing activities and during the optimal period. Seed and mulch will be certified “noxious weed free” and seed mix will be agreed to in advance by the landowner or land managing agency.	Yes
OM-16	Routine and corrective O&M activities in streams with sensitive fish species will occur from July 1 to September 1 in an effort to minimize impact to spawning and migration activities. These activities include, but are not limited to, culvert installation and/or replacement and stream bank stabilization. Fording streams at existing crossings on existing roads (e.g., dip, culvert, bridge) will occur as necessary throughout the year.	Yes
OM-17	Woody vegetation management within 50 feet of streams will be conducted by hand crews.	Yes
OM-18	Herbaceous plants and low-growing shrubs will be left in place if they do not interfere with the safe O&M of Project lines and equipment as described in Appendix R of the Plan of Development.	Yes
OM-19	The Companies will use existing stream crossings or new, permanent crossings that were approved as part of the Project, and will not create additional crossings without prior agency permitting and approval.	Yes
OM-20	Only pesticides approved by the land managing agency as safe to use in aquatic environments and reviewed by the Companies for effectiveness will be used within 100 feet of sensitive aquatic resources or in areas with a high leaching potential.	Yes
OM-21	Prior to the start of O&M activities, all supervisory personnel will be instructed on the protection of natural resources, including sensitive plant and wildlife species and habitats. If a contractor is used, the construction contract will address (a) the sensitive plant species that may be present in a particular area based on previous surveys and literature review; (b) the federal and state laws regarding protection of plants and wildlife; (c) the importance of these resources; (d) the purpose and necessity of protecting them; and (e) methods for protecting sensitive resources (e.g., Endangered Species Act, Migratory Bird Treaty Act, Bald and Golden Eagle Protection Act, and BLM wildlife policy).	Yes
OM-22	Sensitive plant populations that occur within or near the ROW and work areas will be marked on the ground, where practical, to ensure that they are avoided. If species are discovered during the work, the Companies will establish a spatial buffer zone, will contact the appropriate Agency within 24 hours, and will continue with the O&M activities outside of the established buffer unless otherwise directed. The Agency may evaluate the adequacy of the buffer on a case-by-case basis. Unless the Companies are informed otherwise, work outside of the buffer area will continue. If the Companies need to work within the buffer area, the Agencies and Companies will work together to develop a solution that is acceptable to both parties and will allow for the Companies to complete the work in a timely manner or within the scheduled outage window, if applicable. After the O&M activities are completed, or will no longer poses a threat to the plant population, the marking (stakes), if used, will be promptly removed to protect the site’s significance and location from unwanted attention. As needed, marking will be reinstated during the land rehabilitation period.	Yes

EPM Number	Environmental Protection Measures	Applicable to SRBOP
OM-23	If sensitive wildlife species are discovered during O&M activities, and the animals are not directly within ground disturbance areas, they will be protected by marking the edges of the ROW and new access roads in the general vicinity to ensure that workers do not leave those areas. If the animals are within work areas that have, or will have, ground disturbance, the Companies will establish an appropriate buffer zone and will contact the federal or state land manager immediately. The federal or state agency may evaluate the adequacy of the buffer on a case-by-case basis. Unless the Companies are informed otherwise, work outside of the buffer area will continue. If the Companies need to work within the buffer area, the Agencies and Companies will work together to develop a solution that is acceptable to both parties and will allow for the Companies to complete the work in a timely manner or within the scheduled outage window, if applicable. After the O&M activities are completed, or will no longer pose a threat to the species, the marking (stakes) will promptly be removed to protect the site's significance and location from unwanted attention. As needed, marking will be reinstated during the land rehabilitation period.	Yes
OM-24	The Companies will provide crews and contractors with maps showing environmentally sensitive areas; these maps will include work zones as well as ROW areas where ground disturbance will be avoided.	Yes
OM-25	In the event any sensitive plants require relocation, permission will be obtained from the federal agency. If avoidance or relocation is not practical, the topsoil surrounding the plants will be salvaged, stored separately from subsoil, and respread during the restoration process.	Yes
OM-26	If sensitive wildlife species are killed or injured due to O&M activities, the appropriate federal agency will be notified.	Yes
OM-27	All on-site personnel will be made aware that all birds of prey are protected by federal and state laws.	Yes
<b>VISUAL</b>		
VIS-1	The 500-kV transmission line lattice steel towers will be specified to have a dull galvanized finish. The proposed surface finish is a galvanized finish, treated after the initial galvanizing process to produce a dulled finish to reduce surface reflectivity. This process results in an installed tower with more visual absorption and thus allows the towers to blend in better with the landscape.	Yes
VIS-2	The three subconductors (500-kV) and two subconductors (230-kV) that make up the conductor bundles will be specified to have a non-specular finish. Similar to the dulled finish of the transmission structures, the conductors reduce surface reflectivity. This process results in eliminating the shiny ribbon effect often seen in older untreated transmission lines and thus allows the conductors to blend in better with the landscape.	Yes
VIS-3	The proposed 230-kV transmission lines between Windstar and Aeolus will use a steel H-frame structure configuration similar to the existing 230-kV line in the same general location. The steel pole H-frame will utilize self-weathering steel. Self-weathering steel is manufactured from a group of steel alloys that were developed to eliminate the need for painting. This type of steel alloy forms a stable rust-like appearance if exposed to the weather for several years. In areas where the 230-kV structures are skylined, dull galvanized steel will be considered to minimize visual impacts. Dulled galvanized steel has a galvanized finish, treated after the initial galvanizing process to produce a dulled finish to reduce surface reflectivity. This process results in an installed tower with more visual absorption and thus allows the towers to blend in better with the terrain, while at the same time preserving the corrosion resistant properties of the galvanized coating on the steel.	No
VIS-4	No paint or permanent discoloring agents will be applied to rocks or vegetation to indicate limits of survey or construction activity except as required under the timber sale contracts.	Yes
VIS-5	To minimize ground disturbance and/or reduce scarring (visual contrast) of the landscape, the alignment of any new access roads or cross-country routes will follow the landform contours where practicable, providing that such alignment does not impact resource values additionally or result in new impacts to resources that were previously avoided.	Yes
VIS-6	To minimize sensitive feature disturbance and/or visual contrast in designated areas on federal lands, structures will be placed so as to avoid sensitive features such as, but not limited to, riparian areas, water courses and cultural sites and/or to allow conductors to clearly span the features, within the limits of standard tower design. Where conflicts arise between resources, the applicable land manager will be consulted.	Yes
VIS-7	To reduce visual impacts on federal land, including potential impacts on recreation values and safety, towers will be placed at the maximum feasible distance from the highway, canyon and trail crossings within limits of standard design and to the extent practical.	Yes
VIS-8	Crossings of rivers shall be at approximately right angles where practical. Strategic placement of structures will be done both as a means to screen views of the transmission line and ROW and to minimize the need for vegetative clearing.	Yes
VIS-9	Insulators will be made of materials that have reduced potential to reflect and refract light. Glass insulators that are highly reflective will not be permitted in scenic areas on federally managed lands.	Yes



EPM Number	Environmental Protection Measures	Applicable to SRBOP
VIS-10	For segments of the line 1) within the 0- to 0.5-mile zone of Interstate highways where existing lines of the same voltage are paralleled and 2) within the 0- to 0.5-mile zone of residences where existing lines of the same voltage are paralleled, new towers will be located adjacent to existing towers, within the limits of standard transmission line design and considering the ruling span length of adjacent proposed and existing lines.	Yes
VIS-11	<p>Site-specific “micrositing,” within the limits of standard engineering design, will be required near certain sensitive areas, as identified by the agencies, where proposed transmission facilities will impact visual quality; these situations include:</p> <ul style="list-style-type: none"> <li>• Crossings over major highways;</li> <li>• Crossings of high quality historic trails;</li> <li>• Crossings over the North Platte and Snake Rivers;</li> <li>• Sensitive travelways, use areas, residential areas, recreational facilities as identified by the agencies (including national recreation and scenic trails, campgrounds, recreation areas, and trailheads), and other areas identified by management plans; and</li> <li>• To avoid bisecting forest patches within the Sawtooth NF.</li> </ul> <p>The Companies will consult with the applicable local land management agency during transmission line design.</p>	Yes
VIS-12	The lighting specified for the marshaling yards will be the minimum required to meet safety and security standards. All light fixtures within 1,000 feet of a residence will be hooded to eliminate any potential for glare and to prevent light from spilling off the site or up into the sky. Additionally, the fixtures will have sensors and switches to permit the lighting to be turned off at times when it is not required.	Yes
VIS-13	To reduce visual contrast in areas where overstory vegetation is removed for access, tower pads, or conductor clearance, specific sections of the ROW on federal land will have uneven edges (trees will be removed from the edge of the ROW out or away from the ROW boundary) to give a natural appearance, where not in conflict with regulatory requirements (e.g., NERC, WECC, and Occupational Safety and Health Administration requirements). This will be a onetime application (not applicable to operations and maintenance) and conducted with agency approval.	Yes
VIS-14	To mitigate potential visual impacts on federal land, the construction and maintenance plan, to be developed by the Companies, will include measures to reduce ROW scarring and enhance restoration. The plan will be approved by the land management agency prior to ground clearing and construction.	Yes
VIS-15	<p>If Alternative 7K is selected, Natina stain (or an equivalent product) will be applied to towers (including lattice towers) placed on NFS lands within the Sawtooth NF to reduce visual effects at the middleground level.</p> <p>Note that this is an agency imposed measure.</p>	No
<b>CULTURAL</b>		
CR-1	All work conducted in accordance with the Historic Properties Treatment Plan (HPTP) will be performed by qualified archeologists with trained assistants.	Yes
CR-2	An Inadvertent Discovery Plan will be included as part of the HPTP. This plan will specify what steps will be taken if a subsurface cultural resource is discovered during construction, including stopping construction in the vicinity of the find, notification of the appropriate land management agency, identification of a qualified archaeologist to conduct an evaluation of the find, and the development of an approved data recovery program or other mitigation measures.	Yes
CR-3	The Cultural Resources Protection Plan will include provisions for the preparation and curation of artifacts from federal lands and for the preparation of a final report based on the data recovered for activities on federal lands.	Yes
CR-4	Literature reviews and Class III surveys will be completed for cultural resources. A literature review will be conducted on public and private lands and will cover a study area of one-half mile on either side of the proposed and alternate transmission line alignments as well as areas identified for use as multi-purpose areas and access roads. Class III surveys covering the Area of Potential Effect (APE) as specified in the Programmatic Agreement will be completed. A Class II Sample Survey was conducted that consisted of an intensive pedestrian survey of 15 percent of the length of all alternatives. One-mile long by 500-foot wide transect strips were surveyed along proposed and alternative routes on federal lands only, for use in detailed analysis in the EIS. This also included a detailed preliminary assessment of effects on historic trails on all lands within the APE, including existing trail condition and a visual effects assessment.	Yes
CR-5	If construction will adversely affect any properties listed on, or eligible for listing on, the National Register of Historic Places (NRHP), mitigation will be required. Mitigation will be in accordance with the HPTP and may include, but not be limited to, one or more of the following measures: a) avoidance through the use of relocation of structures through the design process, realignment of the route, relocation of temporary workspace, or changes in the construction and/or operational design; b) the use of	Yes

EPM Number	Environmental Protection Measures	Applicable to SRBOP
	landscaping or other techniques that will minimize or eliminate effects on the historic setting or ambience of standing structures; and c) data recovery, which may include the systematic professional excavation of an archaeological site or the preparation of photographic and/or measured drawings documenting standing structures.	
CR-6	Avoidance areas will be flagged or otherwise marked prior to construction activities. Flagging or other marking will be removed once construction is completed in an area.	Yes
CR-7	To minimize unauthorized collecting of archaeological material or vandalism to known archaeological sites, all workers will attend mandatory training on the significance of cultural resources and the relevant federal regulations intended to protect these resources.	Yes
CR-8	If human remains are discovered, construction will be halted and the coroner will be notified and measures specified in the HPTP will be followed.	Yes
CR-9	On NFS lands, a management plan should be developed for each historic property nominated to the NRHP. The plan should be drafted during the nomination process. The National Heritage Strategy should be used to guide decisions on issues related to the Heritage Program.	No
<b>RECLAMATION</b>		
WEED 1 – 3, and 6 – 18	(Described under Weeds)	Yes
WQA 32, 34, and 35	(Described under Water Quality)	Yes
REC-1	The Companies' personnel and their contractor will be trained on noxious and invasive weed identification to facilitate avoidance of infestations where possible or identification of new infestations.	Yes
REC-2	Preconstruction weed treatment will be conducted prior to the start of ground-disturbing activities and at the time most appropriate for the target species.	Yes
REC-3	Preconstruction weed treatment will be limited to the areas that are expected to have surface-disturbing activities. The Final Reclamation Plan will include a schedule showing the phased in-service dates for different segments. Preconstruction weed treatment will be scheduled accordingly.	Yes
REC-4	Preconstruction treatment may use mechanical control, hand spraying, grazing, or pesticides. The Final Reclamation Plan will discuss those options, as applicable.	Yes
REC-5	All pesticide applications will comply with label restrictions, federal, state and/or county regulation, the Companies' specifications and landowner agreements. No spraying will occur prior to notification of the applicable land management agency. On federal or state controlled lands, a pesticide use plan will be submitted prior to any pesticide application as recommended in the BLM herbicide EIS ( <a href="http://www.blm.gov/wo/st/en/prog/more/veg_eis.html">http://www.blm.gov/wo/st/en/prog/more/veg_eis.html</a> ). The pesticide use plan will include the dates and locations of application, target species, pesticide, adjuvants, and application rates and methods (e.g., spot spray vs. boom spray). No pesticide will be applied to any private property without written approval of the landowner. The Final Reclamation Plan will contain a list of pesticides that may be used, target species, best time for application, application rates, and if they are approved for use on BLM-managed and NFS lands.	Yes
REC-6	Pesticides may be applied using a broadcast applicator mounted on a truck or all-terrain vehicle (ATV), backpack sprayers, or with hand sprayers as conditions dictate. Pesticide applications will be conducted only by licensed operators or under the supervision of a licensed operator. Vehicle-mounted sprayers (e.g., handgun, boom, and injector) may be used in open areas readily accessible by vehicle. Where allowed, a broadcast applicator will likely be used. In areas where noxious weeds are more isolated and interspersed with desirable vegetation, noxious and invasive weeds will be targeted by hand application methods (e.g., backpack spraying), thereby avoiding other plants. Preconstruction pesticide applications will not occur within 100 feet of known special status species. Calibration checks of equipment will be conducted at the beginning and periodically during spraying to ensure proper application rates are achieved.	Yes
REC-7	All areas treated will be documented using GPS technologies and included in the annual report.	Yes
REC-8	Areas of existing noxious weeds and invasive species will be avoided where possible to reduce the risk of spread.	Yes
REC-9	Project vehicles will arrive at the job site clean of all soil and herbaceous material. The Construction Contractor will ensure vehicles and equipment are free of soil and debris capable of transporting noxious weed seeds, roots, or rhizomes before the vehicles and equipment access the Project. The CIC will inspect vehicles to ensure compliance.	Yes
REC-10	When the Construction Contractor demobilizes from the job site where identified infestations of noxious weeds are present, they will use appropriate decontamination measures as defined in the Final Reclamation Plan.	Yes
REC-11	Soil stockpiles from areas that did not have noxious weeds or invasive species present, will not be placed	Yes

EPM Number	Environmental Protection Measures	Applicable to SRBOP
	adjacent to populations of noxious weeds or invasive species, where practicable.	
REC-12	Areas disturbed by Project activities are susceptible to the establishment and spread of noxious weeds. Erosion control measures identified in the SWPPP(s) will also assist in preventing the establishment of weeds on exposed soils.	Yes
REC-13	Project-related storage and multi-purpose areas, fly yards, and other areas that are subject to regular long-term disturbance will be kept weed-free through regular site inspections and pesticide applications, subject to the consent of the landowner.	Yes
REC-14	Where preconstruction surveys have identified noxious or invasive weed species infestations, topsoil and other soils will be placed next to the infested area and clearly identified as coming from an infested area. Movement of stockpiled vegetation and salvaged topsoil will be limited to eliminate the transport of soil-borne noxious weed seeds, roots, or rhizomes, and marked as containing noxious seed materials to avoid mixing with weed-free soil. Topsoil will be returned to the area it was taken from and will not be spread in adjacent areas. If the topsoil is not suitable for backfill, then it will be spread in another previously disturbed area and clearly identified for future weed treatments as applicable. As directed by the BLM or USFS, the Construction Contractor may be required to provide additional treatments (i.e., pre-emergent pesticides) to prevent return of noxious weeds.	Yes
REC-15	Straw or hay that may be used as a BMP to control erosion and sedimentation must be certified weed free. If certified weed-free materials are not available, then alternative BMPs will be used. The use of alternative BMPs will be coordinated with the construction storm water inspector.	Yes
REC-16	The topsoil layer will be removed, taking care not to mix it with the underlying sub-soil. Where topsoil separation is employed, topsoil will be stored in a separate stockpile.	Yes
REC-17	Certified weed-free straw, mulch, gravel, and other BMPs as appropriate, will be used as described in the SWPPP to stabilize the stockpile and limit erosion and standing water, control dust, and control the establishment of noxious or invasive weeds in stockpiled soils.	Yes
REC-18	Topsoil and sub-surface soils will be replaced in the proper order during reclamation.	Yes
REC-19	Where it is necessary to spread soils (subsurface soils or waste rock resulting from excavations or foundation drilling), it will be done where practicable and in close proximity to where the disturbance occurred (within the ROW). Material will be spread uniformly to match existing contours, covered with topsoil when available, and reseeded.	Yes
REC-20	Temporarily disturbed lands within the ROW will be recontoured to blend with the surrounding landscape. Recontouring will emphasize restoration of the existing drainage patterns and landform to preconstruction conditions, to the extent practicable. (Tower pads will not be recontoured.)	Yes
REC-21	De-compaction: Areas within the ROW, laydown or multi-purpose areas, and other areas of extensive vehicle travel will typically contain compacted soils. These soils will be de-compacted on a case-by-case basis through negotiation with the landowner or land management agency.	Yes
REC-22	Final Cleanup: Final cleanup will ensure that all construction areas are free of any construction debris including, but not limited to: assembly scrap metals, oil or other petroleum-based liquids, construction wood debris, and worker-generated litter. Permanent erosion control devices will be left in place.	Yes
REC-23	The Companies will utilize soil amendments (e.g., fertilizer, wood or straw mulches, tackifying agents, or soil stabilizing emulsions) on a case-by-case basis and with landowner or land management agency approval. Specific soil amendments will be identified in the Final Reclamation Plan and be consistent with the SWPPPs.	Yes
REC-24	Broadcast seeding will apply the seed directly on the ground surface. The type of broadcast spreader will depend on the size of the area to be seeded, and the terrain. Seed will be placed in direct contact with the soil, ideally at a depth of approximately 0.5 to 1-inch deep. It will then be covered by raking or dragging a chain or harrow over the seed bed to remove air pockets.	Yes
REC-25	Drill seeding will be used on areas of sufficient size with moderate or favorable terrain to accommodate mechanical equipment. Drill seeding provides the advantage of planting the seed at a uniform depth.	Yes
REC-26	Hydroseeding, which is the spraying of seeds and water onto the ground surface, or hydromulching, which is the spraying of seeds, mulch and water, may be implemented on steeper slopes. Tackifier may be added to facilitate adherence of hydromulch to slopes greater than 25 percent.	Yes
REC-27	Reclamation treatments, such as seeding, will be based on site-specific conditions and the appropriate seed mix approved for those conditions. Seeding will help to reduce the spread of noxious weeds by revegetating exposed soils.	Yes
REC-28	If areas are not immediately seeded after construction, due to weather or scheduling constraints, all noxious weeds will be eradicated before seeding, preferably in the spring.	Yes
REC-29	Upon completion of construction, 70 percent of the disturbed area along the transmission line within the ROW, at substations, and at related facilities will be revegetated with approved vegetation (refer to Appendix D – Framework Reclamation Plan).	Yes

EPM Number	Environmental Protection Measures	Applicable to SRBOP
<b>VEGETATION</b>		
REC-2-17, 23-29	(Described under Reclamation)	Yes
WEED-6, 7, and 11	(Described under Weeds)	Yes
VEG-1	During construction, blading of native plant communities will be minimized, consistent with safe construction practices. Where feasible, shrubs will be cut at or near ground level to facilitate re-growth after construction. The footprint of construction and operations facilities will be kept to the minimum necessary. Blading near watercourses will be minimized and BMPs identified in the SWPPPs will be implemented to reduce the risk of materials entering watercourses.	Yes
VEG-2	Where feasible, locate new access roads to minimize the number of trees removed during construction. However, new access roads will not be relocated if the change would result in an increase in the overall disturbance (acres); require additional cut and fill activities, or impact other sensitive resources (e.g., sagebrush plant community, sensitive species habitat, and/or cultural resources or viewshed).	Yes
VEG-3	In areas where revegetation will be completed, topsoil salvage and replacement will be used for all cut or fill areas and for areas larger than 1 acre where soils will be disturbed during construction.	Yes
VEG-4	Prior to the start of construction and maintenance activities, all contractor vehicles and equipment (including personal protective equipment) will be cleaned of soil and debris capable of transporting invasive plant seeds or other propagules. All vehicles and equipment will be inspected by Agency-approved inspectors and certified as weed free by agency approved personnel, in order to ensure they have been cleaned properly. The Construction Contractor will identify the location of all cleaning stations, how materials cleaned from vehicles at these stations will be either captured or treated so that cleaning station locations will not become infected, and who will confirm/certify that vehicles leaving cleaning stations and/or entering construction sites are free of invasive plant materials in the Final Reclamation and Noxious Weed Plans.	Yes
VEG-5	The Agency-approved Environmental CIC will approve primary noxious weed-free straw or other erosion control materials on federally managed lands prior to application.	Yes
VEG-6	The Companies will consult with the appropriate land management agency to determine tree seedlings to be planted in decommissioned roadbeds and other temporarily disturbed areas on federally managed lands (where trees were removed) to assure seedlings are matched to site conditions.	Yes
VEG-7	The Companies will notify the USFS when topsoil salvage operations are scheduled and seek assistance with field identification of topsoil material.	No
VEG-8	Annual post-construction monitoring and treatment of invasive plants on closed roads (access roads dedicated for use by the Companies only), temporary roads, fly yards, and other disturbed areas in the ROW shall continue for 3 years in areas where infestations or populations of noxious weeds have been identified. If after 3 years, post-construction conditions are not equivalent to or better than preconstruction conditions (in accordance with applicable permit), monitoring and treatment will continue until these conditions are met. If adjacent land uses are contributing to the introduction and/or persistence of invasive plant species within areas disturbed by the Project, then the Companies will not be required to treat noxious weeds for more than 3 years.	Yes
VEG-9	The Companies will meet the terms and stipulations within the timber sale contracts for timber removal operations on the Medicine Bow-Routt, Caribou-Targhee, and Sawtooth NFs.	No
VEG-10	All timber and other vegetative resources to be sold or removed from federal lands will be appraised and sold at the appraised value.  Note that this is an agency imposed measure.	Yes
<b>TES-PLANTS</b>		
OM-21-22 and 24-25	(Described under Operations and Maintenance.)	Yes
TESPL-1	Blowout Penstemon – Surface disturbance will be allowed in suitable habitat where species-specific surveys have determined that no populations are present. The species-specific surveys will be conducted the year prior to construction, and the proposed disturbance areas will be redesigned to avoid direct impact to populations.	No

<b>EPM Number</b>	<b>Environmental Protection Measures</b>	<b>Applicable to SRBOP</b>
TESPL-2	Colorado Butterfly Plant – Surface disturbance will be allowed in suitable habitat where species-specific surveys have determined that no populations are present. The species-specific surveys will be conducted the year prior to construction, and the proposed disturbance areas will be redesigned to avoid direct impact to populations.	No
TESPL-3	Qualified botanists shall conduct preconstruction surveys during a season when target species are readily identifiable for special status or globally rare species. Where feasible, micro-siting of Project facilities shall avoid direct impacts to identified populations. Survey reports documenting the surveys, their results, and recommendations must be provided to the applicable land management agencies for approval prior to construction. Agency botanists may evaluate individual sites based on site-specific conditions. Documentation of the evaluation of avoidance of impacts to sensitive and globally rare plants must be provided to the Agencies prior to construction.	Yes
TESPL-4	Slickspot Peppergrass – Environmental monitors will survey for and mark slickspots and aboveground populations of slickspot peppergrass within 50 feet of the construction area prior to ground disturbance (including roads) in potential or occupied slickspot peppergrass habitat. No construction shall occur within 50 feet of any slickspot peppergrass plants or slickspots found by the environmental monitor. Also, construction shall not occur within 50 feet of previously known occupied slickspot peppergrass areas, based on Idaho CDC data, even if aboveground plants are not observed by the environmental monitor. Within proposed critical habitat, impacts to Primary Constituent Elements, such as native sagebrush/forb vegetation, will be avoided to the extent practicable. Seeding during reclamation in areas of suitable habitat will use methods that minimize soil disturbance such as no-till drills or rangeland drills with depth bands. Reclamation will use certified weed-free native seed. Excess soils will not be stored or spread on slickspots.  Note that this species is not expected to occur in Segment D.	Yes
TESPL-5	Sand dune and cushion plant communities will be avoided, where feasible.	No
TESPL-6	Goose Creek Milkvetch – Surface disturbance will be allowed in suitable habitat for Goose Creek milkvetch where species-specific surveys have determined that no populations are present. The species-specific surveys will be conducted the year prior to construction, and the proposed disturbance areas will be redesigned to avoid direct impacts to populations.  Note that this species is not expected to occur in Segment D.	No
TESPL-7	Ute Ladies'-tresses – Qualified botanists shall conduct preconstruction surveys during a season when target species are readily identifiable for special status or globally rare species. Where feasible, micro-siting of project facilities shall avoid direct impacts to identified populations. Survey reports documenting the surveys, their results, and recommendations must be provided to the applicable land management agencies for approval prior to construction. Agency botanists may evaluate individual sites based on site-specific conditions. Documentation of the evaluation of avoidance of impacts to sensitive and globally rare plants must be provided to the Agencies prior to construction.	No
<b>WEEDS</b>		
REC-2–15, 17	(Described under Reclamation)	Yes
OM-13–15 and 20	(Described under Operations and Maintenance)	Yes
VEG-4 and 8	(Described under Vegetation)	Yes
FISH-3	(Described under Fish)	Yes
SOIL-11 and 12	(Described under Soils)	Yes
WEED-1	The Companies shall consult with each appropriate local land management agency (USFS and BLM) office to determine appropriate seed mix and commercial seed source for revegetation. The Final Reclamation Plan shall specify the approved seed mixes for federal lands. Disturbed soil will not be allowed to support the growth of noxious weeds or invasive weedy species. Prevention of noxious weeds will apply to all phases of the Project.	Yes
WEED-2	Weed control and prevention measures shall adhere to all agency standards and guidelines. These measures shall be developed in consultation with local, state, and federal weed agencies; all implemented measures will follow the principle of integrated weed management.	Yes
WEED-3	Soil stockpiles in areas containing noxious weeds and invasive plant species shall be kept separate from soil removed from areas that are free of noxious weed and invasive plant species, and the soil will be replaced in or near the original excavation. If requested by the applicable land management agency, soil	Yes

EPM Number	Environmental Protection Measures	Applicable to SRBOP
	stockpiles shall be covered with plastic if the soil stockpile will be in place for two weeks or more and is not being actively used. On lands managed by the USFS or per private landowner request, stockpiles will not be covered with plastic.	
WEED-4	Gravel and other materials used for road construction on federally managed lands shall come from certified weed-free sources.	Yes
WEED-5	Where feasible, construction will begin in weed-free areas before operating in weed-infested areas. The feasibility of this measure will be determined after survey data is completed to identify weed-free and weed-infested areas.	Yes
WEED-6	All movement of construction vehicles outside of the ROW will be restricted to pre-designated access, contractor-acquired access, or public roads. All construction sites and access roads, including overland access routes, will be clearly marked or flagged at the outer limits prior to the onset of any surface-disturbing activity. All personnel shall be informed their activities must be confined within the marked or flagged areas.	Yes
WEED-7	Prior to arrival at the work site, all Construction Contractor vehicles and equipment will be cleaned using high-pressure air or water equipment. The cleaning activities will concentrate on tracks, feet, or tires and the undercarriage with special emphasis on axles, frame, cross members, motor mounts, underneath steps, running boards, and front bumper/brush guard assemblies. Vehicle cabs will be swept out. The locations of vehicle cleaning stations will be identified by the Construction Contractor. Additional wash stations will be required as identified by the BLM, USFS, and CIC. Wash stations shall be no more than one acre in size and preferably located in areas that have previously been disturbed. The Construction Contractor shall provide a detailed design identifying all of the components of the wash stations, including rock surface and geomembrane layer to provide a barrier between noxious weeds and seeds and the soil for approval by the BLM or USFS Authorized Officer or his/her designated representative. The Construction Contractor shall also provide a description of how residue from the wash station will be disposed of for approval by the BLM, BOR, or USFS Authorized Officer or his/her designated representative.	Yes
WEED-8	When moving from weed contaminated areas to other areas along the transmission line ROW, all construction vehicles and equipment will be cleaned using compressed water or air in designated wash stations before proceeding to new locations. All washing of construction vehicles and equipment must be performed in approved wash stations.	Yes
WEED-9	Construction personnel will inspect, remove, and appropriately dispose of weed seed and plant parts found on their clothing and equipment.	Yes
WEED-10	Immediately following construction, the Construction Contractor will implement the reclamation of disturbed land as outlined in Appendix D – Framework Reclamation Plan as required. Continuing revegetation efforts will ensure adequate vegetative cover, reducing the potential for the invasion of noxious weeds.	Yes
WEED-11	Discing or other mechanical treatments that would disturb the soil surface within native habitats will be avoided in favor of pesticide application, which is an effective means of reducing the size of noxious weed populations, as well as preventing the establishment of new colonies.	Yes
WEED-12	Implement preventive measures, such as quarantine and closure, to reduce and contain existing noxious weed populations. Flagging will alert personnel and prevent access into areas where noxious weeds occur. Construction disturbance will be minimized in these areas until control measures have been implemented (with the exception of reclamation treatments, as applicable).	Yes
WEED-13	If discing or tilling is an appropriate and feasible weed treatment method, it will only be permitted in bladed areas.	Yes
WEED-14	Seed selection will be based on site-specific conditions, and the appropriate seed mix will be identified for those conditions based on the presence and treatment of noxious weeds in the Project area. The CIC or weed specialist may recommend modified seeding application rates and timing of implementation to achieve site-specific weed management objectives.	Yes
WEED-15	Additional weed and/or erosion control measures recommended during monitoring will follow the preventive and control measures outlined in the Noxious Weed Plan. Continued cooperation with the current BLM, BOR, or USFS noxious weed coordinator and local weed management areas is also encouraged.	Yes
WEED-16	A certified pesticide applicator, approved in the states of Wyoming or Idaho, will perform the application using pesticides selected and approved by BLM or USFS in accordance with applicable laws, regulations, and permit stipulations. All pesticide applications must follow U.S. Environmental Protection Agency label instructions. Application of pesticides will be suspended in accordance with the Companies' vegetation management specifications (e.g., strong winds, etc.).	Yes
WEED-17	Pesticides will be transported to the Project site daily with the following provisions:	Yes



EPM Number	Environmental Protection Measures	Applicable to SRBOP
	<ul style="list-style-type: none"> <li>Only the quantity needed for that day's work will be transported.</li> <li>Concentrate will be transported only in approved containers in a manner that will prevent tipping or spilling, and in a location isolated from the vehicle's driving compartment, food, clothing, and safety equipment.</li> <li>Mixing will be done offsite, over a drip catching device and at the following distances from open or flowing water, wetlands, or other sensitive resources: 100 feet for practically non-toxic to slightly toxic pesticides; 250 feet for moderately toxic or label advisory for ground/surface water; and 250 feet for highly toxic to very highly toxic pesticides. No pesticides will be applied at these areas unless authorized by appropriate regulatory agencies.</li> <li>All pesticide equipment and containers will be inspected for leaks daily.</li> <li>Disposal of spent containers will be in accordance with the pesticide label.</li> </ul>	
WEED-18	Pesticide contractors will be state-certified to apply pesticides and will obtain, and have readily available, copies of the appropriate material safety data sheets for the pesticides used. All pesticide spills will be reported in accordance with applicable laws and requirements.	Yes
<b>STREAMS and WETLANDS</b>		
OM- 16-20	(Described under Operations and Maintenance)	Yes
VIS-6 and 8	(Described under Visual)	Yes
REC-1–22, and 29	(Described under Reclamation)	Yes
FISH-1 and 3	(Described under Fish)	Yes
WQA-1, 2, 4 – 6, 13 – 18, 21, 23 – 29, and 45 – 48	(Described under Water Quality)	Yes
TRANS-13, and 16 – 18	(Described under Transportation)	Yes
WET-1	Impacts on wetland and riparian areas will be avoided unless physically or economically infeasible or where activities are permitted. Land management agencies' plans (RMPs, MFPs, and Forest Plans) that have standards, guidelines, stipulations, or avoidance buffers will be adhered to. Where these do not exist, Inland Fish Strategy (INFISH) buffers will be followed.	Yes
WET-2	Wetland delineations will be performed prior to construction to support CWA Section 404 permitting and to minimize Project impacts. The delineation will identify both wetland and non-wetland waters of the United States that would be affected by the Project.	Yes
WET-3	Where impacts on wetlands are not avoidable, site-specific crossing plans and measures to mitigate impacts will be submitted to the appropriate regulatory agency, as well as the land-managing agency. The Companies and/or Construction Contractor will obtain all necessary permits prior to discharging dredged or fill material to waters of the U.S. and state.	Yes
WET-4	To meet USACE requirements for CWA 404 permitting, the Companies will submit a mitigation plan that is accepted by the USACE. The framework for this plan is included in the Final EIS.	Yes
WET-5	Limit construction equipment operating in streams and wetlands to that needed to clear temporary access, erect towers, pull conductor, and perform ground disturbing activities.	Yes
WET-6	Limit clearing of vegetation at the edges of a stream or wetland to the minimal area necessary for required conductor clearance and vehicle passage. Reclaim at least 70 percent of potential ground cover within 100 feet from the edges of all perennial streams, lakes, and other water bodies, or to the outer margin of the riparian ecosystem where wider than 100 feet.	Yes
WET-7	Salvage and respread topsoil in areas subject to temporary disturbance where grading and excavation will occur.	Yes
WET-8	Prohibit the use of imported soil, tree stumps, riprap, or brush to stabilize the construction corridor within wetlands.	Yes
<b>FISH</b>		
OM-16	(Described under Operation and Maintenance)	Yes
BLA-2	(Described under Public Safety)	Yes

EPM Number	Environmental Protection Measures	Applicable to SRBOP
FISH-1	On BLM-administered land, all culverts, whether temporary or permanent, must be designed to meet BLM Gold Book standards (Surface Operating Standards and Guidelines for Oil and Gas Exploration Development). On NFS lands, Forest Plan standards and guidelines shall apply.	Yes
FISH-2	When taking water from TES fish-bearing streams for road and facility construction and maintenance activities, intake hoses shall be screened with the most appropriate mesh size (generally 3/32 of an inch), or as determined through coordination with NMFS and/or USFWS.	Yes
FISH-3	All wetlands and waters in the project area are assumed to contain aquatic invasive species and all equipment contacting water will be properly disinfected. After work is complete in a waterbody, any equipment involved in construction in that waterbody must be washed to remove any propagules of aquatic invasive species and to prevent the spread of those species to other waterbodies.	Yes
<b>WILDLIFE</b>		
WILD-1	Requests for exceptions from closure periods and areas will be submitted by the Companies or the Construction Contractor per the Companies' direction to the appropriate BLM Field Office in which the exception is requested through the Environmental CIC. Established exception processes on BLM-managed lands will be followed. The agency, the CIC, or a contractor chosen by the Companies and approved by the agency, will conduct any surveys and coordinate with any other agencies as necessary. Factors considered in granting the exception include; animal conditions, climate and weather conditions, habitat conditions and availability, spatial considerations (e.g., travel routes and landscape connectivity), breeding activity levels, incubation or nestling stage, and timing, intensity, and duration of the Proposed action. Requests will be submitted in writing no more than 2 weeks prior to the proposed commencement of the construction period, to ensure that conditions during construction are consistent with those evaluated. The Authorized Officer, on a case-by-case basis, may grant exceptions to seasonal stipulations, and has the authority to cancel this exception at any time. A good faith effort will be made to act on exceptions within 5 business days of receiving a request, to allow for orderly construction mobilization. The CIC will conduct any required site visit and report the status to BLM for consideration of the decision to accept or deny the request. There is no exception process for NFS lands; all closure periods will be adhered to. Any proposed modifications to closure periods will be discussed on a case-by-case basis with the USFS.	Yes
WILD-2	Vehicular speeds during construction and operations will be limited to 25 mph on all unsurfaced access roads. Crew and vehicle travel will be restricted to designated routes while on state designated big game winter range (except for areas within the ROW).	Yes
WILD-3	The Project will be designed and constructed in compliance with Avian Power Line Interaction Committee (APLIC) guidance in order to reduce impacts to avian species. Any changes to the Project's design, as requested by federal, state, or local jurisdictions, as well as any changes considered by the Companies, will also be in compliance with APLIC guidance.	Yes
WILD-4	Preconstruction pedestrian or aerial nest surveys will be conducted in suitable habitat during the appropriate nesting time periods needed to identify new raptor nest locations, and to establish the status of previously identified raptor nests. Appropriate buffers will be applied to active nests during construction. All encounters of nesting raptors in the survey area will be reported to the biological monitor and to appropriate agencies.	Yes
WILD-5	Surveys will be conducted along the route across the Caribou-Targhee NF, prior to construction, for caves, abandoned mines, and adits. If suitable bat roosts are identified, the Companies will consult with the USFS to determine appropriate protective measures.	No
WILD-6	Guy wires will be marked with bird deterrent devices on federal lands to avoid avian collisions with structures, as directed by local land manager.	Yes
WILD-7	Flight diverters will be installed and maintained where the transmission line crosses rivers at the locations identified in Appendix H, Table 4-1.. Additional locations may be identified by the Agencies or the Companies. The flight diverters will be installed as directed in the Companies' approved Avian Protection Plans and in conformance with the MBTA and Eagle Acts as recommended in the current APLIC collision manual.	Yes
WILD-8	Preconstruction pedestrian or aerial surveys will be completed during appropriate nesting time periods, needed to identify each raptor species. The Companies will provide survey results to the Authorized Officer for approval. (See WILD-1)	Yes
WILD-9	To the extent feasible, all vegetation clearing will be conducted prior to the onset of the avian breeding season (generally April 15 through July 31, depending on local conditions and federal land management plan requirements) in order to minimize impacts to migratory birds. Where this is not feasible, preconstruction surveys within the disturbance footprint shall be conducted within seven days prior to clearing. If an active nest (containing eggs or young) of a bird species protected under the MBTA is found during either preconstruction surveys or construction activities, the nest will be identified to	Yes

EPM Number	Environmental Protection Measures	Applicable to SRBOP
	species, inconspicuously marked, and vegetation left in place until any young have fledged.	
WILD-10	Snags will be maintained along the outer portions of the Project's ROW in order to reduce the impacts to cavity nesting habitat to the extent practical and where not in conflict with the Companies' vegetation management specifications.	Yes
WILD-11	Any areas that may require blasting will be identified and a blasting plan will be submitted to the appropriate agency for approval. Blasting within 0.25 mile of a known sensitive wildlife resource will require review and approval by the appropriate agency.	Yes
WILD-12	The Companies will annually document the presence and location of large stick nests on any towers constructed as a result of this Project. Nests will be categorized to species or species group (raptors or ravens), to the extent possible. This will begin following the first year of construction and continue through year 10 of operations. Results will be provided annually to the applicable land management agency and to the USFWS.  Note that this is an agency imposed measure.	Yes
<b>TES-WILDLIFE</b>		
TESWL-1	H-frame structures will be equipped with anti-perch devices to reduce raven and raptor use, and limit predation opportunities on special status prey species on federally managed lands.  Note that this is an agency imposed measure based on the Casper and Rawlins RMPs.	Yes
TESWL-2	In the event that an ESA-listed species not covered by the Biological Opinion (BO) is discovered during surveys, construction will cease, the USFWS will be notified, and Section 7 consultation will be initiated. In addition, the transmission line or structures will be relocated to minimize direct impacts to newly discovered ESA species, to the extent practical.	Yes
TESWL-3	Black-footed Ferret – Preconstruction surveys will be conducted for the black-tailed prairie dog (in addition to those already proposed for the white-tailed prairie dog) in Segment 1W. <sup>1/</sup>	No
TESWL-4	The Environmental CIC, an agency biologist, or agency designee will accompany the Construction Contractor site engineers during the final engineering design or prior to ground-disturbing activities to verify and flag the location of any known occupied structures (e.g., nests, burrows, colonies, dens) utilized by sensitive species. This will include, but not be limited to, artificial burrows that have been constructed as part of research/restoration efforts, prairie dog colonies, and raptor nests, which could be impacted by the Project based on the indicative engineering design. The final engineering design will be "micrositied" (routed) to avoid direct impact to these occupied structures to the extent practical within engineering standards and constraints.	Yes
TESWL-5	Grouse Species – The Companies will provide the Agencies a list of the protocols that the Companies will use during greater sage-grouse and sharp-tailed grouse preconstruction surveys. The Agencies will either approve these protocols, or suggest alternative protocols to be used.	Yes
TESWL-6	Sharp-tailed Grouse – In areas where sharp-tailed grouse leks occur in proximity to greater sage-grouse leks, surface disturbance will be avoided within 4 miles of occupied or undetermined greater sage-grouse leks from March 1 to July 15. In areas where sharp-tailed grouse leks occur in isolation from greater sage-grouse leks, surface disturbance will be avoided within 1.2 miles of occupied or undetermined sharp-tailed grouse leks from March 15 to July 15.	No
TESWL-7	Yellow-billed cuckoo - A preconstruction survey for the yellow-billed cuckoo will be conducted at any proposed crossing of suitable habitat. If these birds are detected within 1 mile of the centerline (within existing habitat), construction will not occur until the young have fledged or the nest is abandoned. The crossing-specific plan will contain proposed monitoring measures to assure compliance with this measure.	Yes
TESWL-8	Sage-Grouse – On federal lands, there will be no surface occupancy (NSO) within 0.6 mile of the perimeter (or centroid if the perimeter has not been mapped) of occupied greater sage-grouse leks located within Core areas in Wyoming, and NSO within 0.25 mile in non-Core areas (as required by BLM IM WY-2012-19 and BLM land management plans). "No surface occupancy," as used here, means no new surface facilities, including roads, will be placed within the NSO area. Other activities (i.e., non-surface occupancy) may be authorized, with the application of appropriate seasonal stipulations, provided the resource's protected area is not adversely affected.	Yes
TESWL-9	Sage-Grouse – On federal lands, surface disturbance will be avoided within 4 miles of occupied or undetermined greater sage-grouse leks from March 1 to July 15. This distance (i.e., 4 miles) may be reduced on a case-by-case basis by the applicable agency, if site-specific conditions will allow the Project to be located closer to the lek than 4 miles (e.g., topography prevents the Project from being visible from the lek, or a major disturbance such as a freeway or existing transmission line is located between the Project and the lek).	Yes

EPM Number	Environmental Protection Measures	Applicable to SRBOP
TESWL-10	Sage-Grouse – If Winter Concentration Areas for the greater sage-grouse are designated, there will be no surface disturbances within the designated areas from November 1 through March 15.	Yes
TESWL-11	Sage-Grouse – No structures that require guy wires will be used in occupied sagebrush obligate habitats within the area managed under the Kemmerer RMP.	No
TESWL-12	Colorado River T&E Fishes – A payment of a one-time fee, based on a fee schedule provided by the USFWS, will be made based on the amount of water used during construction of any segments that cross the Colorado River system.	No
TESWL-13	Midget faded rattlesnake – Preconstruction surveys for occupied or potential midget faded rattlesnake hibernacula (i.e., rock outcrops with south to east aspect) will be conducted. The Companies shall prepare a plan identifying measures to reduce impacts to midget faded rattlesnake if they are discovered. This plan shall require approval by BLM and the WGFD prior to its implementation	No
TESWL-14	<p>For the protection of aquatic and riparian/wetland dependent species, surface disturbing and disruptive activities will be avoided in the following areas: 1) identified 100-year floodplains; 2) areas within 500 feet of perennial waters, springs, wells, and wetlands; and 3) areas within 100 feet of the inner gorge of ephemeral channels on federally managed lands. Where it is not possible to avoid wetland and riparian habitat, crossing-specific plans will be developed. These plans will: 1) demonstrate that vegetation removal is minimized; 2) show how sediment will be controlled during construction and operation within wetland and riparian areas; 3) attempt to intersect the wetland or riparian habitat at its edge; and 4) provide measures to restore habitat and ensure conservation of riparian microclimates. This plan will be submitted to the appropriate land management agency and approved prior to construction of any portion of the Project within sensitive riparian habitat.</p> <p>Note that this is an agency imposed measure.</p>	Yes
TESWL-15	<p>Anti-perch devices will be required on power poles located within one-quarter mile of prairie dog towns within the BLM's Rawlins Field Office.</p> <p>Note that this is an agency imposed measure.</p>	No
TESWL-16	<p>Sage-Grouse – If the Kemmerer RMP is amended to allow Proposed Route 4 or Alternatives 4C or 4E to be selected, existing fences within 1 mile of the portion of the Gateway West Project located on lands managed by the Kemmerer RMP will be modified with FireFly Grouse Flight diverters (or a similar product) in order to prevent greater sage-grouse mortalities. Additional site-specific reclamation, such as transplanting sagebrush seedlings within previous disturbed habitats, will also be required to off-set the net loss of sagebrush habitats within the Rock Creek/Tunp management area.</p> <p>Note that this is an agency imposed measure.</p>	No
<b>PALEONTOLOGICAL RESOURCES</b>		
PALEO-1	If significant fossil materials are discovered during Project construction, all surface-disturbing activities in the vicinity of the find will cease until notification to proceed is given by the Authorized Officer. The site will be protected to reduce the risk of damage to fossils and context. Appropriate measures to mitigate adverse effects to significant paleontological resources will be determined by the Authorized Officer.	Yes
PALEO-2	Paleontological resources (as defined by omnibus Public Land Management Act – Paleontological Resources Preservation Section) on federally managed land shall be managed and protected using scientific principles and expertise. Appropriate plans for inventory, monitoring, and the scientific and educational use of these resources shall be developed in accordance with applicable agency laws, regulations and policies.	Yes
PALEO-3	Where fossil-bearing sediments are exposed by construction, the sediments must be covered with a 4-inch layer of soil where feasible to reduce unauthorized removal or disturbance of resources.	Yes
PALEO-4	<p>To ensure compliance with the Paleontological Resources Preservation Section of the Public Land Management Act, the Companies' Paleontological Resources Protection Plan for the Project (see PALEO-2) shall specify that:</p> <ul style="list-style-type: none"> <li>Monitoring of excavation and grading in sensitive sediments, especially access roads and tower sites, must occur when construction is near or in those geologic formations.</li> <li>Monitoring of excavations in sensitive sediments, screening the excavated spoils, and processing of bulk sediment samples for microinvertebrate fossils must occur where there is a significant potential for data recovery from those spoils.</li> </ul> <p>Monitoring must be performed by a qualified paleontologist and in consultation with a designated paleontologist in each state, NF, or BLM district. The Authorized Officer will designate the appropriate paleontologist depending on project location.</p>	Yes

EPM Number	Environmental Protection Measures	Applicable to SRBOP
	Note that this is an agency imposed measure.	
PALEO-5	Field surveys will be completed prior to surface disturbance in areas with potential fossil yields of Class 3, 4, or 5, in accordance with criteria stated in the Paleontological Resources Protection Plan and as required by the land management agency.  Note that this is an agency imposed measure.	Yes
<b>GEOLOGIC HAZARDS</b>		
BLA-1, 2	(See description under Public Safety)	Yes
GEO-1	Review the final location of the preferred alternative with affected mine operators and lessees to ensure all measures are taken to protect against subsidence.	Yes
GEO-2	A site-specific soil analysis shall be conducted prior to construction to verify any areas identified as unstable or marginally unstable on federal lands. A site-specific geotechnical analysis shall be conducted of federal lands prior to construction to locate areas where there is landslide risk. If such areas are identified, the Companies will develop mitigation and submit a report to the appropriate land management agency.	Yes
<b>SOILS</b>		
WQA-1-17	(Described under Water Quality)	Yes
SOIL-1	The Wyoming BLM State Reclamation Policy and applicable Agency management plan requirements for soil management will be followed on federal lands in the state of Wyoming.	No
SOIL-2	The Companies will submit a Compaction Monitoring Plan for review and Agency approval prior to construction that specifies the conditions under which construction will either not start or will be shut down due to excessively wet soils. Conditions will be measurable in the field and easy to demonstrate to construction workers.	Yes
SOIL-3	During decommissioning, some obviously compacted areas, such as established newly constructed access roads, will require loosening prior to revegetation. If necessary to re-establish vegetation, the Companies will use a ripper blade, till, or similar instrument to loosen the surface soil layer.	Yes
SOIL-4	Detrimental soil disturbance such as compaction, erosion, puddling, and displacement will be minimized through implementing measures identified in the SWPPP. Measures may include road ripping, frequent waterbars, cross-ditching (e.g., rolling dips) or other methods to reduce compaction while preventing gully formation. Ripping pattern should be altered to a crossing, diagonal, or undulating pattern of tine paths to avoid concentrated runoff patterns that can lead to gullies.	Yes
SOIL-5	The Companies are responsible for monitoring to ensure soil protection is achieved, and providing a monitoring report on reseeding success and/or other methods to stabilize soils to the USFS by the end of each growing season for areas on NFS lands for 3 years or until requirements are met for the applicable permit.	No
SOIL-6	Reclamation of all temporary disturbances on NFS lands (such as road cuts) should include replacement of material to original contours and re-compaction to pre-disturbance compaction percentage (which should be identified during reclamation at adjacent locations to the disturbance). Guidelines for streambank re-compaction to maximize vegetative regrowth and mechanical stability are covered in USACE publication ERDC TN-EMRRP-SR-26.	No
SOIL-7	In order to meet Forest Plan Soil Standards on NFS lands, the Reclamation Plan (approved by the USFS) will describe on-site restoration using topsoil salvaging.	No
SOIL-8	When feasible, reroute all construction or maintenance activities around wet areas so long as the route does not cross into sensitive resource areas and at the approval of the CIC.	Yes
SOIL-9	Limit access of construction equipment to the minimum area feasible, remove and separate topsoil in wet or saturated areas subject to temporary disturbance, and stabilize subsurface soils with a combination of one or more of the following: perform grading to dewater problem areas, utilize weight dispersion mats, and maintain erosion control measures such as surface drilling and back-dragging. After construction is complete, regrade and recontour the area, replace topsoil, and reseed to achieve the success standard desirable plant covers as stated in the Reclamation Plan.	Yes
SOIL-10	Vegetation removal and soil disturbances (including temporary road improvements) will be minimized in areas where soil constraints occur. In areas of overland construction, where vegetation removal is required, mowing or cutting and/or back-dragging a cat blade will be the primary method used (also refer to Appendix D –Framework Reclamation Plan).	Yes
SOIL-11	Prior to construction, soils will be evaluated to determine if they are expansive and if they may have potential effects on the proposed facilities. Where they represent a potential hazard, solutions recommended by the Project's geotechnical engineer, such as excavation and replacement of the	Yes

<b>EPM Number</b>	<b>Environmental Protection Measures</b>	<b>Applicable to SRBOP</b>
	expansive soils with compacted backfill, will be required. If imported backfill material is used, it must be from a BLM/USFS-approved source and certified as free of invasive weeds and propagules (i.e., seeds and root fragments).	
SOIL-12	Limit disturbance of soils and vegetation removal to the minimum area necessary for access and construction.	Yes
SOIL-13	Inform all construction personnel, before they are allowed to work on the Project, of environmental concerns, pertinent laws and regulations, and elements of the erosion control plan.	Yes
SOIL-14	Slope and berm graded material, where possible, to reduce surface water flows across the graded area.	Yes
SOIL-15	Replace excavated materials in disturbed areas and minimize the time between excavation and backfilling.	Yes
SOIL-16	Direct the dewatering of excavations onto stable surfaces to avoid soil erosion.	Yes
SOIL-17	Re-establish native vegetation cover in highly erodible areas as quickly as possible following construction where determined necessary (refer to Appendix D –Framework Reclamation Plan).	Yes
SOIL-18	Construction water and water used for dust control will come from permitted sources identified by the Construction Contractor and a map showing the locations of these sources will be provided to the CIC. If the quality of the water is found to be causing any environmental changes (i.e., dying vegetation, excessively hard crusting of soils), the Construction Contractor will test the quality of the water and provide the results to the BLM for review.	Yes
SOIL-19	All Project personnel will be educated on dust control procedures.	Yes
SOIL-20	To prevent accelerated wind or water erosion on dirt roads, gravel mulches may be added if other mitigation measures are not adequate or if the area is not in a sensitive receptor zone. Gravel of approximately 0.75 to 1.5 inches in diameter should be used and cover a minimum of 90 percent of the soil surface. Slopes steeper than 3:1 may require additional sediment and erosion control structures.	Yes
SOIL-21	Surface roughening aids establishment of vegetative cover, reduces runoff velocities, increases infiltration, and reduces erosion by providing sediment trapping. Graded areas with smooth surfaces increase the potential for accelerated erosion; therefore, surfaces should be left in a roughened condition whenever possible.	Yes
SOIL-22	On steep slopes (greater than 30 percent) or in areas of concentrated flows (e.g., waterways) erosion control matting or riprap may be used to stabilize the surface and increase infiltration times.	Yes
SOIL-23	Areas graveled for stabilization will be inspected to ensure depressions caused by vehicle traffic are filled and runoff is not being directed toward wetlands or other receiving waters.	Yes
SOIL-24	Roughened surfaces should be periodically inspected for rills and washes. Areas exhibiting accelerated erosion will be filled and reseeded as necessary or determined by the BLM or USFS Authorized Officer or his/her designated representative.	Yes
SOIL-25	Construction, operation, and maintenance activities will be restricted when the soil is too wet to adequately support construction or maintenance equipment (i.e., when heavy equipment creates ruts in excess of 4 inches deep, over a distance of 50 feet or more in wet or saturated soils). This standard will not apply in areas with fine-grained soils, which easily form depressions even in dry weather.	Yes
<b>WATER QUALITY</b>		
WET-3	(Described under Streams and Wetlands)	Yes
FISH-1	(Described under Fish)	Yes
SOIL-9, 10, and 12-25	(Described under Soils)	Yes
WQA-1	The appropriate NPDES permits for construction activities that disturb one acre or more of land will be obtained from the Department of Environmental Quality and USEPA or their designees.	Yes
WQA-2	NPDES permit requirements will be met. This includes implementing and maintaining appropriate BMPs for minimizing impacts to surface water.	Yes
WQA-3	One or more responsible persons will be designated to manage stormwater issues, conduct the required stormwater inspections, and maintain the appropriate records to document compliance with the terms of the NPDES permit.	Yes
WQA-4	The SWPPPs will be modified as necessary to account for changing construction conditions.	Yes
WQA-5	The SWPPPs will identify areas with critical erosion conditions that may require special construction activities or additional industry standards to minimize soil erosion.	Yes
WQA-6	Stormwater BMPs will be inspected and maintained on all disturbed lands during construction activities, as described in the SWPPP and appropriate NPDES permit.	Yes
WQA-7	Approved sediment and erosion control BMPs will be installed and maintained until disturbed areas meet final stabilization criteria.	Yes



EPM Number	Environmental Protection Measures	Applicable to SRBOP
WQA-8	Temporary BMPs will be used to control erosion and sediment at multi-purpose areas (equipment storage yards, fly yards, lay down areas) and substations.	Yes
WQA-9	The construction schedule may be modified to minimize construction activities in rain-soaked or muddy conditions.	Yes
WQA-10	Damaged temporary erosion and sediment control structures will be repaired in accordance with the SWPPP and appropriate NPDES permit.	Yes
WQA-11	Upon completion of construction, permanent erosion and sediment BMPs will be installed along the transmission line within the ROW, at substations, and at related facilities in accordance with the SWPPPs and appropriate NPDES permit.	Yes
WQA-12	In areas of droughty soils, the soil surfaces will be mulched and stabilized to minimize wind erosion and to conserve soil moisture in accordance with the SWPPPs.	Yes
WQA-13	Construction industry standard practices and BMPs will be used for spill prevention and containment.	Yes
WQA-14	Construction spills will be promptly cleaned up and contaminated materials hauled to a disposal site that meets local jurisdictional requirements.	Yes
WQA-15	All multi-purpose areas and fly yards will contain fueling areas with containment of a minimum of 110 percent capacity of the largest vehicle to be refueled therein. Fueling of vehicles will take place within the transmission line ROW under the guidance of the ROW grant/special-use authorization. The SPCC plan will specify BMPs.	Yes
WQA-16	If an upland spill occurs during construction, berms will be constructed with available equipment to physically contain the spill and prevent migration of hazardous materials toward waterways. Absorbent materials will be applied to the spill area. Dry materials will not be cleaned up with water or buried. Contaminated soils and other materials will be excavated and temporarily placed on and covered by plastic sheeting, or suitable containers, in a containment area a minimum of 100 feet away from any wetland or waterbody, until proper disposal is arranged in appropriately designated and approved areas off-site.	Yes
WQA-17	If a spill occurs which is beyond the capability of on-site equipment and personnel, an Emergency Response Contractor will be identified and available to further contain and clean up the spill.	Yes
WQA-18	For spills in standing water or where spilled materials reach water, floating booms, skimmer pumps, and holding tanks will be used as appropriate by the contractor to recover and contain released materials on the surface of the water. Other actions will be taken, as necessary, to clean up contaminated waters.	Yes
WQA-19	If pre-existing contamination is encountered during operations, work will be suspended in the area of the suspected contamination until the type and extent of the contamination is determined. The type and extent of contamination; the responsible party; and local, state, and federal regulations will determine the appropriate cleanup method(s) for these areas.	Yes
WQA-20	The SPCC Plan will include details on the types and quantities of absorbent and protective materials (e.g., visqueen, booms) that must be readily available to construction personnel and requirements for the restocking of materials.	Yes
WQA-21	Storage of materials such as fuels, other petroleum products, chemicals, and hazardous materials including wastes will be located in upland areas at least 500 feet away from streams, 400 feet for public wells, and 200 feet from private wells.	Yes
WQA-22	Pumps and temporary fuel tanks for the pumps will be stored in secondary containment. Containment will provide a minimum volume equal to 110 percent of the volume of the largest storage vessel located in the yard.	Yes
WQA-23	Avoid placement of road bed material in channels (perennial, intermittent or ephemeral). Road bed material contains considerable fines that would create sedimentation in coarse cobble dominated stream channels. Even in seasonally dry reaches those fines could be transported during flow periods and negatively impact fish spawning reaches below.	Yes
WQA-24	On federal lands, consult with appropriate land management agency staff prior to siting and design for stream crossings (location, alignment, and approach for culvert, drive-through, and ford crossings). This may include a hydrologist, engineer and, for perennial and many intermittent streams, an aquatic biologist.	Yes
WQA-25	All culverts on NFS lands, both permanent and temporary, shall be designed and installed to meet desired conditions for riparian and aquatic species as identified in the applicable Forest Plan. Culverts should not be hydraulically controlled. Hydraulically controlled culverts create passage problems for aquatic organisms. Culvert slope should not exceed stream gradient and should be designed and implemented (typically by partial burial in the streambed) to maintain streambed material in the culvert.	No
WQA-26	Culvert sizing on NFS lands should also comply with Guidance for Aquatic Species Passage Design, USFS Northern Region & Intermountain Region.	No
WQA-27	On non-federal lands, culvert placement should comply with state BMPs.	Yes

EPM Number	Environmental Protection Measures	Applicable to SRBOP
WQA-28	Migration of construction-related sediment to all adjacent surface waterbodies will be prevented.	Yes
WQA-29	If the Project proposes to obtain water from wells or surface water sources to suppress dust, written approval from the landowner or regulatory agency will be obtained prior to appropriation.	Yes
WQA-30	<p>In the event of a spill, cleanup will be immediate. The Construction Contractor will keep spill kits in their vehicles to allow for quick and effective response to spills. Items to be included in the spill kit at a minimum are:</p> <ul style="list-style-type: none"> <li>• Protective clothing and gloves</li> <li>• Absorptive clay, “kitty litter,” or other commercial absorbents</li> <li>• Plastic bags and a bucket</li> <li>• Shovel</li> <li>• Fiber brush and screw-in handle</li> <li>• Dust pan</li> <li>• Caution tape</li> <li>• Highway flares (use on established roads only)</li> <li>• Detergent</li> </ul>	Yes
WQA-31	<p>The response to a hazardous material spill will vary with the size and location of the spill, but general procedures include:</p> <ul style="list-style-type: none"> <li>• CIC and BLM, BOR, or USFS notification</li> <li>• Traffic control</li> <li>• Dressing the cleanup team in protective clothing</li> <li>• Stopping any leaks</li> <li>• Containing spilled material</li> <li>• Cleaning up and removing spilled pesticide and contaminated absorptive material and soil</li> <li>• Transporting spilled pesticide and contaminated material to an authorized disposal site</li> </ul>	Yes
WQA-32	<p>Physical response actions are intended to ensure all spills are immediately and thoroughly contained and cleaned up. However, the first priority in responding to any spill is personal and public safety. Construction personnel will be notified of evacuation procedures to be used in the event of a spill emergency, including evacuation routes. In general, the first person on the scene will:</p> <ul style="list-style-type: none"> <li>• Attempt to identify the source, composition, and hazard of the spill.</li> <li>• Notify appropriately trained personnel immediately.</li> <li>• Isolate and stop the spill, if possible, and begin cleanup (if it is safe).</li> <li>• Initiate evacuation of the area, if necessary.</li> <li>• Initiate reporting actions.</li> </ul>	Yes
WQA-33	Persons should only attempt to cleanup or control a spill if they have received proper training and possess the appropriate protective clothing and cleanup materials. Untrained individuals should notify the appropriate response personnel. In addition to these general measures, persons responding to spills will consult Appendix P – Framework Hazardous Materials Management Plan, Appendix R – Operations, Maintenance, and Emergency Response Plan, and the MSDSs or USDOT Emergency Response Guidebook (to be maintained by the Construction Contractor onsite during all construction activities), which outlines physical response guides for hazardous materials spills.	Yes
WQA-34	In general, expert advice will be sought to properly cleanup major spills. After contaminated soil is recovered, all machinery used will be decontaminated, and recovered soil will be treated as hazardous waste. Contaminated cleanup materials (absorbent pads, etc.) and vegetation will be disposed of in a similar manner. For spills, cleanup may be verified by sampling and laboratory analysis at the discretion of the Companies.	Yes
WQA-35	If construction activity occurs within a wetland with standing water or a flowing stream, prior to construction, absorbent booms will be placed on the water surface either around or downstream of the construction zone. In addition to this measure, cleanup materials, including absorbent spill pads and plastic bags, will be placed onsite at flowing streams and “wet” wetlands when construction is occurring within 200 feet of these areas (also refer to Appendix F –Framework Stormwater Pollution Prevention Plan).	Yes
WQA-36	<p>Emergency spill response kits will be maintained at all locations where hazardous materials are stored, in sufficient quantities based on the amount of materials stored onsite. Spill response equipment should be compatible with types of materials stored onsite. Spill response equipment should be inventoried regularly to ensure spill response equipment is adequate for the type and quantities of materials being used. The following equipment, are examples of spill response equipment for use in cleanup situations:</p> <ul style="list-style-type: none"> <li>• Shovels</li> <li>• Absorbent pads/materials</li> </ul>	Yes

EPM Number	Environmental Protection Measures	Applicable to SRBOP
	<ul style="list-style-type: none"> <li>• Personal protective gear</li> <li>• Medical first-aid supplies</li> <li>• Bung wrench (nonsparking)</li> <li>• Phone list with emergency contact numbers</li> <li>• Storage containers</li> <li>• Communications equipment</li> </ul>	
WQA-37	<p>The Construction Contractor and subcontractors shall provide spill prevention and response training to appropriate construction personnel. Persons accountable for carrying out spill response activities will be designated prior to construction and informed of their specific duties and responsibilities with respect to environmental compliance and hazardous materials. The training shall inform appropriate personnel of site-specific environmental compliance procedures. Training of personnel should be completed at least once a year. All training events should be documented, including the date and names of those personnel in attendance. These records shall be maintained with the SPCC Plan and/or Hazardous Materials Management Plan. At a minimum, this training shall include the following:</p> <ul style="list-style-type: none"> <li>• An overview of regulatory requirements</li> <li>• Methods for the safe handling/storage of hazardous materials</li> <li>• Spill prevention procedures</li> <li>• Emergency response procedures</li> <li>• Use of personal protective equipment</li> <li>• Use of spill cleanup equipment</li> <li>• Procedures for coordinating with emergency response teams</li> <li>• Procedures for notifying agencies</li> <li>• Procedures for documenting spills</li> <li>• Identification of sites/areas requiring special treatment, if any</li> </ul>	Yes
WQA-38	Notification and documentation procedures for spills that occur during Project construction, operation, or maintenance will conform to applicable federal, state, and local laws and regulations. Adherence to such procedures will be the top priority once initial safety and spill response actions have been taken.	Yes
WQA-39	<p>Notification will begin as soon as possible after discovery of a spill. The individual who discovers the spill will contact the Contractor's supervisory personnel and the CIC. If the Construction Contractor determines the spill may seriously threaten human health or the environment, he/she will orally report the discharge as soon as possible, but no later than 24 hours from the time they become aware of the circumstances, as directed below. A written report must be submitted to Wyoming or Idaho Department of Environmental Quality (DEQ) within 15 days. Prior to initiating notification, the Construction Contractor (or individual initiating notification) should obtain as much information as possible, including:</p> <ul style="list-style-type: none"> <li>• current threats to human health and safety, include known injuries, if any</li> <li>• spill location, including landmarks and nearest access route</li> <li>• reporter's name and phone number</li> <li>• time spill occurred</li> <li>• type and estimated amount of hazardous materials involved</li> <li>• potential threat to property and environmental resources, especially streams and waterways</li> <li>• status of response actions</li> </ul>	Yes
WQA-40	<p>The following mandatory notifications will be made by the Construction Contractor. These numbers should be documented in the SPCC plan, along with the contact information for the cleanup contractor. Select and notify the appropriate government agencies based on geographic location of the spill site.</p> <ul style="list-style-type: none"> <li>• Wyoming DEQ (24 hours) at (307) 777-7781.</li> <li>• Idaho Communication Center (24 hours) at (800) 632-8000 or (208) 846-7610.</li> <li>• If spill threatens human health, call 911, and the appropriate county response center.</li> <li>• National Response Center (NRC) (800) 424-8802. The NRC should be notified of a reportable spill as required by 40 CFR 110, 40 CFR 117, and/or 49 CFR 171.</li> </ul> <p>The Construction Contractor will verify and update these emergency phone numbers before and during construction. The Construction Contractor (or other person in charge) will notify the CIC of all spills or potential spills within construction areas.</p>	Yes
WQA-41	When a spill poses a direct and immediate threat to health and safety and/or property, the land management agency and landowners potentially affected by a spill will be notified directly by the Construction Contractor. Immediate notification of land management agencies and landowners is required for all situations in which the spill poses a direct and immediate threat to health and safety and/or property. Failure to report a spill could result in substantial penalties and fines.	Yes

<b>EPM Number</b>	<b>Environmental Protection Measures</b>	<b>Applicable to SRBOP</b>
WQA-42	The Construction Contractor will maintain records for all spills. State and federal agencies that have been verbally notified of a spill will be informed in writing within 10 days for state agencies and 30 days for federal agencies.	Yes
WQA-43	The Construction Contractor shall record spill information in a daily log. The following is a list of items that should be included in the daily log (as appropriate, based on the spill incident): <ul style="list-style-type: none"> <li>time and date of each log entry</li> <li>name of individual recording log entry</li> <li>list of all agencies notified, including name of individual notified, time, and date</li> <li>type and amount of material spill</li> <li>resources affected by spill</li> <li>list of response actions taken, including relative success</li> <li>copies of letters, permits, or other communications received from government agencies throughout the duration of the spill</li> <li>copies of all outgoing correspondence related to the spill</li> <li>photographs of the response effort (and surrounding baseline photographs if relevant)</li> </ul>	Yes
WQA-44	During the Project's operation and maintenance phase, the Companies will ensure its facilities, personnel, and contractors comply with federal, state, and local laws and regulations pertaining to the use, storage, transport, and disposal of hazardous materials and adhere to required emergency response and cleanup procedures in the event of a hazardous material spill. The Companies and all operations and maintenance subcontractors shall develop hazardous materials management and response plans and properly train employees for handling, packaging, and shipping hazardous materials and responding to hazardous materials spills or emergency events.	Yes
WQA-45	Reclaim stream channels/bottoms and wetlands to their approximate preconstruction configuration/contours, unless the original stream bank contours are excessively steep and/or unstable and a more stable final contour can be specified or where permanent stream crossings must be created to maintain access throughout the life of the Project.	Yes
WQA-46	Stabilize stream banks, wetlands, and adjacent upland areas by establishing permanent erosion control measures and vegetation cover after the completion of construction (refer to Appendix N – Framework Erosion, Dust Control, and Air Quality Plan and Appendix D – Framework Reclamation Plan).	Yes
WQA-47	Use permanent waterbars, if needed, on slopes above streams or wetland boundaries, on travel routes, and along the ROW to minimize sediment flow from adjacent uplands into the stream or wetland.	Yes
WQA-48	Remove all prefabricated equipment pads, swamp mats, and geotextile fabric used for stream and wetland crossings on completion of construction.	Yes
<b>LAND USE</b>		
TRANS-5	(See description under Transportation)	Yes
LU-1	Signs shall be posted at access points to access roads where public access is restricted by a land use plan, and on private, state, and Tribal lands at the request of the landowner, agency, or Tribal government. Signs shall indicate the restriction or regulation, location, penalty for violation, and appropriate contact information for reporting violations. Signage shall be maintained and replaced as part of the routine maintenance.	Yes
<b>AGRICULTURE</b>		
AGRI-1	Consult with the Farm Service Agency and landowners to determine how construction may affect the CRP status of the land currently enrolled in CRP.	No
<b>TRANSPORTATION</b>		
FIRE-6	(See description in Public Safety (Blasting, Fire, Contamination))	Yes
TRANS-1	A Final Traffic and Transportation Management Plan will be developed and implemented to provide site-specific details showing how the Project will comply with the EPMs listed in this attachment. The Final Traffic and Transportation Management Plan will be submitted to, and approved by, the appropriate federal, state, and local agencies with authority to regulate use of public roads, and approved prior to the issuance of a Notice to Proceed with construction.	Yes
TRANS-2	If a construction method requires the closure of a state- or county-maintained road for more than 1 hour, a plan will be developed to accommodate traffic as required by a county or state permit.	Yes
TRANS-3	On county- and state-maintained roads, caution signs will be posted on roads, where appropriate, to alert motorists of construction and warn them of slow traffic. Traffic control measures such as traffic control personnel, warning signs, lights, and barriers will be used during construction to ensure safety and to minimize traffic congestion.	Yes
TRANS-4	To reduce traffic congestion and roadside parking hazards, an equipment yard will be provided for primary parking for employee personal vehicles.	Yes

<b>EPM Number</b>	<b>Environmental Protection Measures</b>	<b>Applicable to SRBOP</b>
TRANS-5	Unauthorized vehicles will not be allowed within the construction ROW or along roadsides near the ROW.	Yes
TRANS-6	Construction vehicles will follow a 25 mph speed limit on unposted project roads.	Yes
TRANS-7	Landowners will be notified at least 48 hours prior to the start of construction within 0.25 mile of a residence.	Yes
TRANS-8	Emergency vehicle access to private property will be maintained.	Yes
TRANS-9	Roads in residential areas will be restored as soon as possible, and construction areas near residences will be fenced off at the end of the construction day, without blocking residential traffic.	Yes
TRANS-10	Roads negatively affected by construction and as identified by the applicable jurisdictional agency and/or landowner will be returned to preconstruction condition. The method of preconstruction condition documentation will be coordinated by the Construction Contractor and the applicable jurisdictional agency and/or landowner.	Yes
TRANS-11	Roads developed specifically for this project that are identified by the Companies as no longer necessary will be reclaimed as specified in the Final Reclamation Plan. Culverts will be removed.	Yes
TRANS-12	The Companies will attempt to identify existing two-track trails as preferred access roads for construction when existing maintained (e.g., gravel or asphalt) roads are not available.	Yes
TRANS-13	Roads will be designed so proper drainage is not impaired and roads will be built to minimize soil erosion. Consult with appropriate Agencies during the design stage.	Yes
TRANS-14	Access roads built for the Project on federal lands shall be closed to the public unless otherwise agreed upon with the land management agency. Signs shall indicate the restriction or regulation, location, penalty for violation, and appropriate contact information for reporting violations. Signage and road closure measures shall be evaluated during routine visits and maintained or replaced as necessary as part of routine maintenance. Access roads constructed solely for use by the Companies will be maintained by the Companies as needed for the Companies' use in accordance with the ROW grants/special use authorization.	Yes
TRANS-15	Roads to be abandoned may be left intact through mutual agreement of the land management agency, landowner, the tenant, and the Companies, unless located in flood areas or drainage hazard areas or otherwise restricted by federal, state, or local regulations.	Yes
TRANS-16	All temporary culverts and associated fill material will be removed from stream crossings after construction. All permanent culverts will be engineered by the Construction Contractor and approved by the Companies prior to installation.	Yes
TRANS-17	The road or highway within the ROW corridor shall be used to the maximum extent possible for construction and maintenance of the new ROW.	Yes
TRANS-18	To help set public expectations for when temporary access roads are decommissioned, signs shall be posted on all temporary roads and overland access routes identifying them as reclamation areas. Signs will state "Restoration in Progress – No Vehicle Traffic Allowed."	Yes
TRANS-19	During wet road conditions, any ruts deeper than 4 inches remaining on the roads from the Project will be repaired.	Yes
<b>AIR QUALITY</b>		
FISH-3	(Described under Fish)	Yes
TESWL-12	(Described under TES-Wildlife)	Yes
SOIL-18 and 19	(Described under Soils)	Yes
AIR-1	Minimize idling time for diesel equipment whenever possible.	Yes
AIR-2	Ensure that diesel-powered construction equipment is properly tuned and maintained, and shut off when not in direct use.	Yes
AIR-3	Prohibit engine tampering to increase horsepower.	Yes
AIR-4	Reduce construction-related trips as feasible for workers and equipment, including trucks.	Yes
AIR-5	Dust suppression techniques will be applied, such as watering construction areas or removing dirt tracked onto a paved road as necessary to prevent safety hazards or nuisances on access roads and in construction zones near residential and commercial areas and along major highways and interstates.	Yes
<b>ELECTRICAL ENVIRONMENT</b>		
EE-1	During final design, limit the conductor surface gradient in order to meet the IEEE Radio Noise Guideline.	Yes
EE-2	During construction, identify objects such as fences, metal buildings, pipelines, and other metal objects within or near the proposed ROW that have the possibility for induced potentials and currents and implement electrical grounding of these objects according to the utility's and National Electric Code	Yes

EPM Number	Environmental Protection Measures	Applicable to SRBOP
	standards.	
EE-3	During final design and construction, identify areas where large equipment is anticipated and provide sufficient conductor clearance to ground to meet the NESC 5 mA rule or limit size or access of large equipment.	Yes
<b>PUBLIC SAFETY (Blasting, Fire, Contamination)</b>		
WQA-13 - 20	(Described under Water Quality)	Yes
WEED-24, 25	(Described under Weeds)	Yes
WILD-11	(Described under Wildlife)	Yes
BLA-1	The Blasting Plan will identify blasting procedures including safety, use, storage, and transportation of explosives that will be employed where blasting is needed, and will specify the locations of needed blasting.	Yes
BLA-2	All blasting will be performed by registered licensed blasters who will be required to secure all necessary permits and comply with regulatory requirements in connection with the transportation, storage, and use of explosives, and blast vibration limits for nearby structures, utilities, wildlife, and fish (where blasting is conducted in waterbodies).	Yes
BLA-3	Appropriate flags, barricades, and warning signals will be used to ensure safety during blasting operations. Blast mats will be used when needed to prevent damage and injury from fly rock.	Yes
BLA-4	Blasting in the vicinity of pipelines will be coordinated with the pipeline operator, and will follow operator-specific procedures, as necessary.	Yes
BLA-5	Damages that result from blasting will be repaired or the owner fairly compensated.	Yes
BLA-6	Proper blasting techniques, including proper cover of charges, will be followed.	Yes
BLA-7	Matting will be used in rock blasting operations to minimize and control dust.	Yes
BLA-8	Notification of blasting activities will be provided to nearby residents.	Yes
BLA-9	The Construction Contractor will prepare site specific blasting plans.	Yes
BLA-10	<p>The Blasting Plan for the proposed Project will also stipulate the following:</p> <ul style="list-style-type: none"> <li>Explosives will not be stored on federal land without prior written permission from the land-management agency. Copies of this permission will be posted on each magazine.</li> <li>Seventy-two hours advance notice of blasting activities will be given to the land-management agency, railroads, highway departments, and local communities; occupants of nearby residences, buildings, and businesses; and local farmers.</li> <li>Warning signs will be erected and maintained at all approaches to the blast areas and flaggers will be stationed on all roadways passing within 1,000 feet of blasting activities.</li> <li>Explosives will not be primed or fused until just before use.</li> <li>Blasting will take place during daylight hours only and will be monitored with three axis seismographs to ensure safe vibration levels are not exceeded.</li> <li>Vibration measured as peak particle velocity will not exceed 4 inches per second adjacent to an underground pipeline and 2 inches per second for any aboveground structure (including water wells).</li> </ul>	Yes
FIRE-1	Train all personnel about the measures to take in the event of a fire including; fire dangers, locations of extinguishers and equipment, emergency response, and individual responsibilities for fire prevention and suppression.	Yes
FIRE-2	Equip all construction equipment operating with internal combustion engines (including off-highway vehicles, chainsaws, generators, heavy equipment, etc.) with spark arresters. Qualified spark arresters will be in a maintained and nonmodified condition and meet U.S. Department of Agriculture Forest Service Standard 5100-1a, or the Society of Automotive Engineers Recommended Practices J335 or J350. Refer to 43 Code of Federal Regulations §8343.1.	Yes
FIRE-3	Restrict motorized equipment, including worker transportation vehicles, to the designated and approved work limits. Operate all vehicles on designated roads or park in areas where vegetation is less than 8 inches tall. Vehicles, including the undercarriages, will be cleared of vegetation accumulations and checked periodically to ensure no buildup of flammable vegetation.	Yes
FIRE-4	Require all motor vehicles and equipment to carry, and individuals using handheld power equipment to have, specified fire prevention equipment. Carry shovels, water, and fire extinguishers on all equipment and vehicles. Equipment will carry extinguishers rated ABC-10 pound minimum and vehicles will carry ABC-2.5 pound minimum.	Yes
FIRE-5	Provide a list of equipment capable of being adapted to fighting fires to local fire protection agencies.	Yes
FIRE-6	Notify the appropriate fire suppression agencies of scheduled road closures.	Yes



<b>EPM Number</b>	<b>Environmental Protection Measures</b>	<b>Applicable to SRBOP</b>
FIRE-7	Prohibit burning of slash, brush, stumps, trash, explosives storage boxes, or other Project-generated debris unless authorized by the applicable land management agency.	Yes
FIRE-8	Designate a Fire Guard on each construction crew prior to the start of construction activities each day and provide a communications system for maintaining contact with fire control agencies.	Yes
FIRE-9	The Companies shall comply with fire restrictions and/or waivers as applicable.	Yes
FIRE-10	If a fire spreads beyond the suppression capability of workers with these tools, all will cease fire suppression action and leave the area immediately via pre-identified escape routes.	Yes
FIRE-11	Initiate fire suppression actions in the work area to prevent fire spread to or on federally administered lands. If fire ignitions cannot be prevented or contained immediately, or it may be foreseeable to exceed the immediate capability of workers, the operation must be modified or discontinued. No risk of ignition or re-ignition will exist on leaving the operation area.	Yes
FIRE-12	Prior to any operation involving potential sources of fire ignition from vehicles, equipment, or other means, review weather forecasts and potential fire danger. Prevention measures to be taken each workday will be included in the specific job briefing. Consideration for additional mitigation or discontinuing the operation must be given in periods of extreme wind and dryness.	Yes
FIRE-13	Operate welding, grinding, or cutting activities in areas cleared of vegetation within range of the sparks for that particular action. A spark shield adequate for the sparks may be used to prevent sparks from carrying. A spotter equipped with a round-nose shovel and two ABC-rated 5-pound fire extinguishers and a 5-gallon backpack waterpump is required to watch for ignitions during, and one hour after, the activity. Water may be used to wet down surrounding vegetation but does not take the place of an adequately cleared area and spark shield.	Yes
FIRE-14	No smoking will be allowed while operating equipment or while walking or working in areas with vegetation.	Yes
FIRE-15	Smoke only in cleared areas.	Yes
FIRE-16	In areas where smoking is allowed, completely extinguish all burning tobacco and matches and discard them in ash trays, not on the ground.	Yes
FIRE-17	Do not allow any fires or barbecues on the transmission line ROW, at material yards, substations, access roads, or other construction areas.	Yes
FIRE-18	Clear away all flammable material to a minimum of 10 feet, including snags (fallen or standing dead trees) from areas of operation where a spark, fire, or flame could be generated.	Yes
FIRE-19	If a fire does start by accident, take immediate steps to extinguish it (if it is safe to do so) using available fire suppression equipment and techniques taught at field crew emergency response training provided by the Construction Contractor or the Companies.	Yes
CON-1	All construction staff will be trained on the types of contamination that could be encountered and how to respond if contamination is encountered.	Yes
<b>NOISE</b>		
NOISE-1	Identify and provide a public liaison person before, and during, construction to respond to concerns of neighboring receptors, including residents, about construction noise disturbance.	Yes
NOISE-2	Establish a toll-free telephone number for receiving questions or complaints during construction, and develop procedures for responding to callers.	Yes
NOISE-3	Implement and maintain a noise complaint review process to deal with residents' or other potential queries and complaints as they arise. Such complaints will be logged and investigated on an individual basis to facilitate resolution of the issue of concern.	Yes

1/ TESWL-3 has been offered by the Companies; however, although the Companies are encouraged to protect all prairie dog towns, formal black-footed ferret surveys within those towns will no longer be required by the BLM.

AGRI – agriculture; AIR – air quality; BLA – blasting; CON – contamination; CR – cultural resources; EE – electrical environment; FIRE – fire; FISH – fish; G – general; GEO – geologic hazards; LU – land use; NOISE – noise; OM – operations and maintenance; PALEO – paleontological resources; REC – reclamation; SOIL – soils; TESPL – threatened, endangered, and sensitive (TES) plants; TESWL – TES wildlife; TRANS – transportation resources; VEG – vegetation; VIS – visual; VR – visual resources; WEED – weeds; WET – streams and wetlands; WILD – wildlife; WQA – water quality

**APPENDIX B  
DETAILED CALCULATION SPREADSHEET FOR MEP VALUE**

**Proposed Mitigation Portfolio,  
ACRES (August 2014)**

Segment	Route	Route Miles Across federal lands in SRBOP	Acres of Project occupancy INSIDE designated corridors			Acres of Project Occupancy OUTSIDE designated corridors			Total Project- Occupied Acres within SRBOP
			Natural Vegetation	Disturbed Vegetation*	Total	Natural Vegetation	Disturbed Vegetation*	Total	
Segment 8	BLM Preferred	2	t	t	0	3	5	8	8
	Proposed	18	0	0	0	2	27	28	28
Segment 9	BLM Preferred	11	3	7	10	4	14	18	28
	Proposed	46	0	0	0	14	56	69	69
Combined	BLM Preferred 8 & 9	13	3	7	10	7	19	26	36
	Proposed 8 & 9	64	0	0	0	15	82	97	97

\* Vegetation that is now disturbed, before any construction impacts

Companies' Proposed Ratios

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Segment	Route	Route Miles Across BLM lands in SRBOP	Companies' Proposed Mitigation Acres INSIDE designated corridors			Companies' Proposed Mitigation Acres OUTSIDE designated corridors			Total Companies' Proposed Mitigation Acres
			Natural Vegetation	Disturbed Vegetation*	Total	Natural Vegetation	Disturbed Vegetation*	Total	
Segment 8	BLM Preferred	2	0	0.0	0	3	5	8	8
	Proposed	37	0	0.0	0	2	27	28	28
Segment 9	BLM Preferred	11	3	7	10	4	14	18	28
	Proposed	52	0	0	0	14	56	69	69
Combined	BLM Preferred 8 & 9	13	3	7	10	7	19	26	36
	Proposed 8 & 9	89	0	0	0	15	82	97	97

**Proposed Mitigation Portfolio,  
COST BASIS (August 2014)**

COST FACTORS	Companies
Cost/acre of reclamation	\$ 1,800
Law Enforcement	\$ 35,000

(based on small intensive projects within SRBOP and 80% success rate)  
assumes 0.25 FTE for 10 years at \$140,000 per FTE

Reduction of fixed costs from Companies' Proposed to BLM Preferred Routes based on relative miles crossed

0.2

Per-Segment Distribution by SRBOP Miles Crossed			
		Miles	Percent
BLM Preferred	Segment 8	2.0	15%
	Segment 9	11.2	85%
	<b>TOTAL</b>	<b>13.2</b>	
Companies Proposed	Segment 8	17.9	28%
	Segment 9	46.0	72%
	<b>TOTAL</b>	<b>63.9</b>	

Segment	Route	Route Miles Across BLM lands in SRBOP	Total Cost of Reclamation by Companies' Mitigation Acres
Segment 8	BLM Preferred	2	\$ 14,400
	Proposed	37	\$ 50,580
Segment 9	BLM Preferred	11	\$ 50,400
	Proposed	52	\$ 124,200
Combined	BLM Preferred 8 & 9	13	\$ 64,800
	Proposed 8 & 9	89	\$ 174,780

**Proposed Mitigation Portfolio,  
COST SUMMARY (August 2014)**

Segment	Route	Route Miles Across BLM lands in SRBOP	Reclamation cost	Law Enforcement (10 years)			Grand Total Companies' Mitigation Offer
Segment 8	BLM Preferred	2	\$ 14,400	\$ 10,606			\$ 25,006
	Proposed	36.6	\$ 50,580	\$ 98,044			\$ 148,624
Segment 9	BLM Preferred	11.2	\$ 50,400	\$ 59,394			\$ 109,794
	Proposed	52.3	\$ 124,200	\$ 251,956			\$ 376,156
Combined	BLM Preferred 8 & 9	13.2	\$ 64,800	\$ 70,000			\$ 134,800
	Proposed 8 & 9	88.9	\$ 174,780	\$ 350,000			\$ 524,780

**Proposed Enhancement Portfolio,  
ACRES (August 2014)**

Segment	Route	Route Miles Across BLM lands in SRBOP	Acres of Disturbance from Construction of Project INSIDE designated corridors			Acres of Disturbance from Construction of Project OUTSIDE designated corridors			Total Construction- Disturbed Acres within SRBOP
			Natural Vegetation	Disturbed Vegetation*	Total	Natural Vegetation	Disturbed Vegetation*	Total	
Segment 8	BLM Preferred	21		1	1	37	49	86	87
	Proposed	18	0	0	0	20	300	321	321
Segment 9	BLM Preferred	11	29	81	110	47	107	154	264
	Proposed	46	0	0	0	116	830	947	947
Combined	BLM Preferred 8 & 9	13	29	82	111	84	156	240	351
	Proposed 8 & 9	64	0	0	0	137	1131	1267	1267

\* Vegetation that is now disturbed, before any construction impacts

Companies' Proposed Ratios

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2 1

Segment	Route	Route Miles Across BLM lands in SRBOP	Companies' Proposed Enhancement Acres INSIDE designated corridors			Companies' Proposed Enhancement Acres OUTSIDE designated corridors			Total Companies' Proposed Enhancement Acres
			Natural Vegetation	Disturbed Vegetation*	Total	Natural Vegetation	Disturbed Vegetation*	Total	
Segment 8	BLM Preferred	21		0.5	1	74	49	123	124
	Proposed	18	0	0.0	0	40	300	341	341
Segment 9	BLM Preferred	11	29	41	70	94	107	201	271
	Proposed	46	0	0	0	233	830	1063	1063
Combined	BLM Preferred 8 & 9	13	29	41	70	168	156	324	394
	Proposed 8 & 9	64	0	0	0	273	1131	1404	1404

**Proposed Enhancement Portfolio,  
COST BASIS (August 2014)**

COST FACTORS	Companies
Cost/acre of reclamation	\$ 1,800
Land Purchase	\$ 320,000
Visitor Enhancement	\$ 500,000
Law Enforcement	\$ 1,750,000

(based on small intensive projects within SRBOP and 80% success rate)  
(based on 104-acre parcel purchase and comps at \$3000/acre)  
(based on \$50,000 per year for 10 years)  
(based on \$140,000/yr FTE for fully equpt ranger, 0.75 FTE for enhancement)

LE assumes 10 years, 0.75 FTE plus 10 more years at 0.5 FTE

distribution of fixed costs of land purchase, visitor enhancement, and endowment fund across the two segments done by segment length on BLM lands within the SRBOP

Reduction of fixed costs from Companies' Proposed to BLM Preferred Routes based on relative miles crossed

0.2

Per-Segment Distribution by SRBOP Miles Crossed			
		Miles	Percent
BLM Preferred	Segment 8	2.0	15%
	Segment 9	11.2	85%
	<b>TOTAL</b>	<b>13.2</b>	
Companies Proposed	Segment 8 + D&E	17.9	28%
	Segment 9 + G	46.0	72%
	<b>TOTAL</b>	<b>63.9</b>	

Segment	Route	Route Miles Across BLM lands in SRBOP	Total Cost of Reclamation by Companies' Enhancement
Segment 8	BLM Preferred	2	\$ 222,300
	Proposed	18	\$ 613,260
Segment 9	BLM Preferred	11	\$ 486,900
	Proposed	46	\$ 1,913,400
Combined	BLM Preferred 8 & 9	13	\$ 709,200
	Proposed 8 & 9	64	\$ 2,526,660

**Proposed Enhancement Portfolio,  
COST SUMMARY (August 2014)**

Segment	Route	Route Miles Across BLM lands in SRBOP	Reclamation cost	land purchase cost	law enforcement	visitor enhancement cost	Management Fund	Grand Total Companies' Enhancement Offer	Idaho Power Line Removal Cost to Companies
Segment 8	BLM Preferred	2	\$ 222,300	\$ 9,697	\$ 53,030	\$ 15,152	\$ 151,515	\$ 451,694	\$1,922,000
	Proposed	18	\$ 613,260	\$ 89,640	\$ 490,219	\$ 140,063	\$ 280,125	\$ 1,613,307	\$1,922,000
Segment 9	BLM Preferred	11	\$ 486,900	\$ 54,303	\$ 296,970	\$ 84,848	\$ 848,485	\$ 1,771,506	\$1,922,000
	Proposed	46	\$ 1,913,400	\$ 230,360	\$ 1,259,781	\$ 359,937	\$ 719,875	\$ 4,483,353	\$1,922,000
Combined	BLM Preferred 8 & 9	13	\$ 709,200	\$ 64,000	\$ 350,000	\$ 100,000	\$ 1,000,000	\$ 2,223,200	\$1,922,000
	Proposed 8 & 9	64	\$ 2,526,660	\$ 320,000	\$ 1,750,000	\$ 500,000	\$ 1,000,000	\$ 6,096,660	\$1,922,000

**Appendix D**

**Large Format Data Tables**

These tables compare the Revised Proposed Routes, Routes 8G, 8H, and 9K, FEIS Proposed 9, the Toana Road Variations, the Alternative 5 Helicopter-assisted Construction Variation, and the West-wide Energy Corridor Variation across many resources, regardless of the need for plan amendments or the likelihood that they would be approved.



List of Tables

**NOTE:** The tables in Appendix D are sequentially numbered within each resource based on routes examined in the Draft EIS. When the two single-circuit option was removed from consideration, tables that addressed only that option were also removed, but subsequent tables in each resource section were NOT renumbered. The FEIS table numbering has been retained in the SEIS for ease of comparison with the FEIS.

Table D.6-1.	Miles of Vegetation Types Crossed by the Revised Proposed Routes, Other Routes, and Route Variations	Table D.10-5b.	Change in Fragmentation Levels as a Result of Roads and Transmission Lines Between Pre- and Post-Construction
Table D.6-2.	Acreage of Construction Impacts to Vegetation	Table D.10-5c.	Pre- and Post-Construction Levels of Fragmentation Resulting from Roads and Transmission Lines Associated with the Seven Action Alternatives
Table D.6-3.	Acreage of Operations Impacts to Vegetation	Table D.10-5d.	Change in Fragmentation Levels as a Result of Roads and Transmission Lines Between Pre- and Post-Construction Associated with the Seven Action Alternatives
Table D.6-4.	<i>(This table has been removed as it is not relevant to the Supplemental Environmental Impact Statement)</i>	Table D.10-6.	Acres of Construction Impacts to Big Game Habitat Impacted by the Gateway West Transmission Line
Table D.6-5.	Acreage of Construction Impacts to Vegetation on Federal Lands	Table D.10-7.	Acres of Construction Impacts that Would Occur within a 1-mile Buffer around Raptors and Birds of Prey Nests
Table D.6-6.	Acreage of Operations Impacts to Vegetation on Federal Lands	Table D.10-8.	Acres of Operations Impacts to Big Game Habitat Impacted by the Gateway West Transmission Line
Table D.6-7.	Wildland Fires Within the Analysis Area	Table D.10-9.	Acres of Operations Impacts that Would Occur within a 1-mile Buffer around Raptor and Bird of Prey Nest Locations
Table D.8-1.	Idaho Designated Noxious Weed Species Potentially Present in the Analysis Area for the Revised Proposed Routes	Table D.11-1.	ESA Threatened, Endangered, or Candidate Wildlife Species with the Potential to Occur within the Analysis Area for Segments 8 and 9
Table D.9-1.	Acreage of Construction Impacts to Wetlands and Riparian Areas	Table D.11-2.	BLM Sensitive, Forest Service Sensitive, or MIS with the Potential to Occur within the Analysis Area
Table D.9-2.	Acreage of Operations Impacts to Wetlands and Riparian Areas	Table D.11-3.	Miles of Habitat Crossed for Federal ESA Wildlife Species with Available Quantitative Data
Table D.10-1.	Miles of Big Game Crossed by the Revised Proposed Routes, Other Routes, and Route Variations	Table D.11-4.	Miles of Habitat Crossed for BLM and Forest Service Sensitive Species with Available Quantitative Data
Table D.10-2.	Known Raptor and Bird of Prey Nest Locations within 1 mile of Project Centerline	Table D.11-5.	Acres of Construction Impacts to Federal ESA Wildlife Species with Available Quantitative Data
Table D.10-3a.	Pre- and Post-Construction Levels of Fragmentation Resulting from Roads	Table D.11-6.	Acres of Construction Impacts to BLM and Forest Service Sensitive Species with Available Quantitative Data
Table D.10-3b.	Change in Fragmentation Levels as a Result of Roads Between Pre- and Post-Construction	Table D.11-7.	Acres of Operations Impacts to Federal ESA Wildlife Species with Available Quantitative Data
Table D.10-3c.	Pre- and Post-Construction Levels of Fragmentation Resulting from Roads Associated with the Seven Action Alternatives	Table D.11-8.	Acres of Operations Impacts to BLM and Forest Service Sensitive Species with Available Quantitative Data
Table D.10-3d.	Change in Fragmentation Levels as a Result of Roads Between Pre- and Post-Construction Associated with the Seven Action Alternatives	Table D.11-9.	Number of Greater Sage-Grouse Leks within Specified Distances from Route Centerlines
Table D.10-4a.	Pre- and Post-Construction Levels of Fragmentation Resulting from Transmission Lines	Table D.11-10.	Number of Columbian Sharp-Tailed Grouse Leks within Specified Distances from Route Centerlines
Table D.10-4b.	Change in Fragmentation Levels as a Result of Transmission Lines Between Pre- and Post-Construction	Table D.11-11.	Miles of Agency Designated Greater Sage-Grouse Habitat Crossed by the Route Centerlines
Table D.10-4c.	Pre- and Post-Construction Levels of Fragmentation Resulting from Transmission Lines Associated with the Seven Action Alternatives		
Table D.10-4d.	Change in Fragmentation Levels as a Result of Transmission Lines Between Pre- and Post-Construction Associated with the Seven Action Alternatives		
Table D.10-5a.	Pre- and Post-Construction Levels of Fragmentation Resulting from Roads and Transmission Lines		

Table D.11-12.	<i>(This table has been removed as it is not relevant to the Supplemental Environmental Impact Statement)</i>
Table D.11-13.	<i>(This table has been removed as it is not relevant to the Supplemental Environmental Impact Statement)</i>
Table D.11-14.	Acres of Construction Impacts to Agency Designated Greater Sage-Grouse Habitat
Table D.11-15.	Acres of Operations Impacts to Agency Designated Greater Sage-Grouse Habitat
Table D.11-16.	Sightlines from Occupied and Undetermined Sage-Grouse Leks on Federally Managed Lands that are Located within 4 miles of Construction Sites Proposed on Federally Managed Lands
Table D.11-17.	Number of Greater Sage-Grouse Leks within Specified Distances from the Seven Action Alternatives
Table D.12-1.	<i>(This table has been removed as it is not relevant to the Supplemental Environmental Impact Statement)</i>
Table D.13-1.	Paleontology Risk Factors for the Revised Proposed Routes, Other Routes, and Route Variations
Table D.14-1.	OPS Earthquake Hazard for the Revised Proposed Routes, Other Routes, and Route Variations
Table D.14-2.	Affected Miles by Earthquake Magnitude Buffers
Table D.14-3.	Miles of Landslide Hazard Ranking Crossed by Revised Proposed Routes, Other Routes, and Route Variations
Table D.14-4.	<i>(This table has been removed as it is not relevant to the Supplemental Environmental Impact Statement)</i>
Table D.14-5.	<i>(This table has been removed as it is not relevant to the Supplemental Environmental Impact Statement)</i>
Table D.14-6.	<i>(This table has been removed as it is not relevant to the Supplemental Environmental Impact Statement)</i>
Table D.14-7.	<i>(This table has been removed as it is not relevant to the Supplemental Environmental Impact Statement)</i>
Table D.15-1.	Analysis of Soil Factors in Construction Disturbance Areas in Acres
Table D.15-2.	Analysis of Soil Factors in Operations Disturbance Areas in Acres
Table D.15-3.	<i>(This table has been removed as it is not relevant to the Supplemental Environmental Impact Statement))</i>
Table D.15-4.	<i>(This table has been removed as it is not relevant to the Supplemental Environmental Impact Statement)</i>

Table D.16-1.	Surface Water Road Crossings by Crossing Type
Table D.16-2.	Potential Construction Disturbance (in Acres per Risk Rank) In Areas of Flood Hazard Risk
Table D.16-3.	Potential Operations (in Acres per Risk Rank) Disturbance in Areas of Flood Hazard Risk
Table D.16-4.	<i>(This table has been removed as it is not relevant to the Supplemental Environmental Impact Statement)</i>
Table D.16-5.	Surface Water Diversions Within One-Half Mile Buffer of Transmission Lines
Table D.16-6.	Number of Surface Water Road Crossings by Stream Type
Table D.16-7.	Potential Construction Disturbance (in Acres per Depth Range) in Areas Containing Shallow Groundwater
Table D.16-8.	Potential Operations Disturbance (in Acres per Depth Range) in Areas Containing Shallow Groundwater
Table D.16-9.	<i>(This table has been removed as it is not relevant to the Supplemental Environmental Impact Statement)</i>
Table D.16-10.	Potable Water Wells within One-Half Mile of Transmission Lines
Table D.16-11.	Miles of the Eastern Snake River Plain Aquifer Crossed by Proposed Routes and Other Routes
Table D.16-12.	Estimated Transmission Line Construction Water Requirements per Segment
Table D.16-13.	TMDL and 303(d) listed Streams in the Analysis Area
Table D.16-14.	Acreage Comparison of Construction Related Stream Impacts
Table D.16-15.	Acreage Comparison of Operations Disturbance to Stream Buffers
Table D.17-1.	Specific Land Uses Crossed or Within 1,000 Feet of Proposed Routes and Other Routes
Table D.19-1.	Roads, Railroads and Bridges Within 1 Mile of Project Centerline
Table D.19-2.	Airports and Heliports Within 1 Mile and 3 Miles of the Proposed Route

Table D.6-1. Miles of Vegetation Types Crossed by the Proposed Routes, Other Routes, and Route Variations

Segment Number	Revised Proposed Routes, Other Routes, and Route Variations	Segment Length in Miles	Natural Vegetation											Disturbed & Semi-natural Vegetation				Other Cover Types	Total Natural Vegetation	Total Disturbed and Semi-natural Vegetation	Total Other Cover Types	Grand Total
			Sagebrush	Saltbush	Greasewood	Dwarf Shrub	Other Shrub	Native Grass	Juniper	Deciduous Forest	Conifer Forest	Wetland & Riparian	Misc.	Disturbed Sagebrush	Disturbed Grassland	Agriculture	Disturbed/ Developed	Water				
8	Revised Proposed Route	129.7	35.8 [0.1]	1.5 [0.2]	0.1			0.3				0.7	0.3	29.3 [4.8]	46.1 [12.2]	14.1 [0.1]	1.2 [0.2]	0.3	1.4 [0.3]	90.7 [17.3]	0.3	129.7 [17.6]
	Proposed – Existing 500-kV Removal <sup>1/</sup>	1.1													0.9 [0.3]	0.2				1.1 [0.3]		1.1 [0.3]
	Route 8G	146.9	47.7 [1.1]	9.2 [0.1]	1.6							0.3	t <sup>2/</sup>	27.1 [0.8]	47.0 [6.7]	11.2	2.5	0.3	58.8 [1.2]	87.8 [7.5]	0.3	147.0 [8.8]
	Route 8G – Existing 500-kV Removal	1.9												0.1	0.2	1.0	0.6			1.9		1.9
	Route 8H	137.5	17.8 [6.5]	2.2 [1.0]	0.1				t <sup>2/</sup> [t <sup>2/</sup> ]			0.2 [t <sup>2/</sup> ]	t <sup>2/</sup>	36.4 [14.2]	65.4 [30.0]	12.8 [t <sup>2/</sup> ]	2.0 [0.4]	0.6 [0.2]	20.4 [7.6]	116.5 [44.6]	0.6 [0.2]	137.6 [52.4]
	Route 8H – Existing 138-kV Removal	25.7	0.5 [0.5]									t <sup>2/</sup> [t <sup>2/</sup> ]		9.1 [6.5]	14.0 [12.5]	1.0 [t <sup>2/</sup> ]	1.0 [0.8]		0.5 [0.5]	25.1 [19.9]		25.7 [20.3]
	Route 8H – Existing 500-kV Removal	1.9												t <sup>2/</sup>	0.2	1.0	0.6			1.9		1.9
9	Revised Proposed Route	165.3	27.5 [6.5]	2.9 [0.9]	0.2			2.9	0.1 [0.1]			0.2 [t <sup>2/</sup> ]	0.3	42.0 [14.1]	80.6 [30.1]	6.0	2.0 [0.4]	0.5	34.1 [7.8]	130.6 [44.6]	0.5	165.3 [52.4]
	Proposed – Existing 138-kV Removal <sup>1/</sup>	25.7	0.5 [0.5]									0.1 [t <sup>2/</sup> ]		9.1 [6.5]	14.0 [12.5]	1.0	1.0 [0.8]		0.6 [0.5]	25.1 [19.8]		25.7 [20.3]
	Segment 9 FEIS Proposed Route	162.2	33.8 [2.8]	19.5 [1.1]	3.5 [t <sup>2/</sup> ]	t <sup>2/</sup>		2.9	t <sup>2/</sup>			0.5 [t <sup>2/</sup> ]	0.7	27.8 [0.4]	57.7 [6.6]	13.9 [t <sup>2/</sup> ]	1.8 [0.1]	0.2	60.9 [3.9]	101.1 [7.2]	0.2	162.2 [11.1]
	Route 9K	174.6	57.4 [1.1]	9.8	1.5			2.9	t <sup>2/</sup>			0.3	0.3	35.2 [0.7]	60.4 [6.8]	4.3	2.3	0.1	72.2 [1.1]	102.2 [7.5]	0.1	174.6 [8.7]
	Proposed – Comparison Portion for Toana Road Variations 1/1-A	8.7	3.3					0.1	t <sup>2/</sup>					0.4	4.8		0.1		3.4	5.2	0.1	8.7
	Toana Road Variation 1	8.5	2.9											4.6	1.0		0.1		2.9	5.7		8.5
	Toana Road Variation 1-A	8.9	3.3											4.3	1.3		0.1		3.3	5.6		8.9
8/9	Comparison portion for the Alternative 5 WWE Corridor and Alternative 5 Helicopter-assisted Construction Variations	66.1 <sup>3/</sup>	43.6	10.4	<1	t <sup>2/</sup>						<1		6.3	2.1	1.3	1.4	t <sup>2/</sup>	55.0	11.1	t <sup>2/</sup>	66.1
	Alternative 5 WWE Corridor Variation	62.2 <sup>4/</sup>	24.7 [4.2]	21.1 [2.1]	1.8 [t <sup>2/</sup> ]	t <sup>2/</sup>						<1	t <sup>2/</sup>	10.1 [<1]	1.4	1.7	<1 [<1]	<1	47.9 [6.3]	14.1 [<1]	<1	62.2 [7.0]
	Alternative 5 Helicopter-assisted Construction Variation	66.1 <sup>3/</sup>	43.6	10.4	<1	t <sup>2/</sup>						<1		5.3	2.1	1.3	1.4	t <sup>2/</sup>	55.0	11.1	t <sup>2/</sup>	66.1

Notes: Mileages have been rounded to the nearest tenth of a mile; therefore, numbers are inexact and columns/rows may not sum exactly

Blank cells indicate zero miles or null value

The numbers in square brackets "[ ]" correspond to impacts that would occur on BLM-managed lands within the SRBOP

<sup>1/</sup> Portions of the disturbance areas may overlap; therefore, actual effects may be less than presented

<sup>2/</sup> "t" indicates only a trace amount (<0.1 mile) crossed

<sup>3/</sup> This variation consists of approximately 32.9 miles of Route 8G and 33.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

<sup>4/</sup> This variation consists of approximately 31.0 miles of Route 8G and 31.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

Source: BLM 2010b, 2014c

**Table D.6-2.** Acreage of Construction Impacts to Vegetation

Segment Number	Revised Proposed Routes, Other Routes, and Route Variations	Segment Length in Miles	Sagebrush	Saltbush	Greasewood	Dwarf Shrub	Other Shrub	Native Grass	Misc.	Conifer Forest			Deciduous Forest			Juniper			Wetland/Riparian		
										Construction Facilities	ROW Clearing <sup>1/</sup>	Total Impacts	Construction Facilities	ROW Clearing <sup>1/</sup>	Total Impacts	Construction Facilities	ROW Clearing <sup>1/</sup>	Total Impacts	Construction Facilities	ROW Clearing <sup>1/</sup>	Total Impacts
8	Revised Proposed Route	129.7	612 [5]	39 [8]	1			4	2										6.0	1.6	7.6
	Proposed – Existing 500-kV Removal <sup>2/</sup>	1.1																			
	Route 8G	146.9	829 [23]	170 [4]	21				<1							26		26	1.5 [0.3]	1.0	2.5 [0.3]
	Route 8G – Existing 500-kV Removal	1.9																			
	Route 8H	137.5	289 [122]	45 [24]	4 [3]				1							<1 [<1]	1 [1]	2 [2]	2.7 [0.7]		2.7 [0.7]
	Route 8H – Existing 138-kV Removal	25.7	<1 [<1]																		
	Route 8H – Existing 500-kV Removal	1.9																			
9	Revised Proposed Route	165.3	489 [115]	69 [24]	4 [3]			73	2							1 [1]	2 [1]	3 [2]	3.2 [0.9]		3.2 [0.9]
	Proposed – Existing 138-kV Removal <sup>2/</sup>	25.7	1 [1]																		
	Segment 9 FEIS Proposed Route	162.2	610 [67]	329 [18]	70 [3]	<1		61	6							<1	<1	1	6.0 [0.7]	t <sup>3/</sup>	6.0 [0.7]
	Route 9K	174.6	1,033 [21]	185 [4]	16			73	2							26	<1	26	2.1 [0.3]	1.4	3.5 [0.3]
	Proposed – Comparison portion for Toana Road Variations 1/1-A	8.7	58					7								<1	<1	1			
	Toana Road Variation 1	8.5	54																		
	Toana Road Variation 1-A	8.9	57																		
8/9	Comparison portion for the Alternative 5 WWE Corridor and Alternative 5 Helicopter-assisted Construction Variations	66.1 <sup>4/</sup>	686 [2]	186 [4]	7	t <sup>3/</sup>			<1										<1	2.4	2.6
	Alternative 5 WWE Corridor Variation	62.2 <sup>5/</sup>	485 [84]	362 [34]	32 [<1]	<1			<1										<1		<1
	Alternative 5 Helicopter-assisted Construction Variation	66.1 <sup>4/</sup>	609 [2]	158 [4]	12	t <sup>3/</sup>			<1										<1	2.4	2.6

**Table D.6-2.** Acreage of Construction Impacts to Vegetation cont.

Segment Number	Revised Proposed Routes, Other Routes, and Route Variations	Segment Length in Miles	Disturbed Sagebrush	Disturbed Grassland	Disturbed/ Developed	Agriculture	Water	No Vegetation Data	Total Natural Vegetation			Total Disturbed and Semi-natural Vegetation	Total Other Cover Types	Grand Total		
									Construction Facilities	ROW Clearing <sup>1/</sup>	Total Impacts			Construction Facilities	ROW Clearing <sup>1/</sup>	Total Impacts
8	Revised Proposed Route	129.7	548 [51]	782 [197]	68 [28]	190 [t <sup>3/</sup> ]	3	4	664 [13]	2	666 [13]	1,588 [276]	7	2,259 [289]	2	2,261 [289]
	Proposed – Existing 500-kV Removal <sup>2/</sup>	1.1		7 [3]	<1 [<1]	1						8 [3]		8 [3]		8 [3]
	Route 8G	146.9	514 [16]	873 [132]	133 [4]	175 [<1]	1	<1	1,048 [27]	1	1,049 [27]	1,695 [152]	1	2,744 [179]	1	2,745 [179]
	Route 8G – Existing 500-kV Removal	1.9	3	<1	2	4						9		9		9
	Route 8H	137.5	684 [277]	1,204 [552]	84 [24]	203 [<1]	4 [1]	4 [2]	341 [150]	1 [1]	343 [152]	2,175 [853]	8 [3]	2,525 [1,006]	1 [1]	2,526 [1,007]
	Route 8H – Existing 138-kV Removal	25.7	17 [13]	26 [23]	2 [2]	2 [t <sup>3/</sup> ]		t <sup>3/</sup> [t <sup>3/</sup> ]	<1 [<1]		<1 [<1]	47 [38]	t <sup>3/</sup> [t <sup>3/</sup> ]	48 [38]		48 [38]
	Route 8H – Existing 500-kV Removal	1.9	3	<1	2	4		t <sup>3/</sup>				10	t <sup>3/</sup>	10		10
9	Revised Proposed Route	165.3	758 [277]	1,469 [549]	106 [24]	167 [1]	4	2 [1]	641 [144]	2 [1]	643 [145]	2,500 [851]	6 [1]	3,147 [996]	2 [1]	3,149 [997]
	Proposed – Existing 138-kV Removal <sup>2/</sup>	25.7	17 [13]	26 [23]	2 [2]	2 [t <sup>3/</sup> ]			1 [1]		1 [1]	47 [38]		48 [39]		48 [39]
	Segment 9 FEIS Proposed Route	162.2	496 [13]	1,227 [164]	77 [3]	406 [<1]	2	3 [<1]	1,083 [88]	<1	1,084 [88]	2,205 [180]	5 [<1]	3,294 [269]	<1	3,294 [269]
	Route 9K	174.6	626 [16]	1,127 [126]	151 [4]	139 [<1]	<1	1	1,337 [25]	1	1,339 [25]	2,043 [146]	2	3,382 [171]	1	3,384 [171]
	Proposed – Comparison portion for Toana Road Variations 1/1-A	8.7	6	92	14				65	<1	65	112		177	<1	177
	Toana Road Variation 1	8.5	63	35	16				54		54	114		168		168
	Toana Road Variation 1-A	8.9	67	28	11				57		57	106		163		163
8/9	Comparison portion for the Alternative 5 WWE Corridor and Alternative 5 Helicopter-assisted Construction Variations	66.1 <sup>4/</sup>	139 [<1]	33 [<1]	66 [2]	12	<1	<1	879 [6]	2	882 [6]	250 [3]	<1 [t <sup>3/</sup> ]	1,130 [10]	2	1,133 [10]
	Alternative 5 WWE Corridor Variation	62.2 <sup>5/</sup>	144 [9]	33 [<1]	40 [11]	15	<1	<1	879 [118]		879 [118]	232 [20]	<1 [t <sup>3/</sup> ]	1,112 [1380]		1,112 [138]
	Alternative 5 Helicopter-assisted Construction Variation	66.1 <sup>4/</sup>	101 [<1]	42 [<1]	69 [2]	34	<1	<1	781 [6]	2	783 [6]	245 [3]	1 [t <sup>3/</sup> ]	1,027 [10]	2	1,029 [10]

Notes: Acreages have been rounded to the nearest whole acre; therefore, numbers are inexact and columns/rows may not sum exactly

Blank cells indicate zero acres or null value

The numbers in square brackets "[ ]" correspond to impacts that would occur on the SRBOP

<sup>1/</sup> ROW Clearing limited to tall vegetation that may impact transmission line safety

<sup>2/</sup> Portions of the disturbance areas may overlap; therefore, actual effects may be less than presented

<sup>3/</sup> "t" indicates only a trace amount (<0.1 acre) of impact

<sup>4/</sup> This variation consists of approximately 32.9 miles of Route 8G and 33.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

<sup>5/</sup> This variation consists of approximately 31.0 miles of Route 8G and 31.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

Source: Tetra Tech 2008-2016; BLM 2010, 2014; Tetra Tech 2016

Table D.6-3. Acreage of Operations Impacts to Vegetation

Segment Number	Revised Proposed Routes, Other Routes, and Route Variations	Segment Length in Miles	Sagebrush	Saltbush	Greasewood	Dwarf Shrub	Other Shrub	Native Grass	Misc.	Conifer Forest			Deciduous Forest			Juniper			Wetland / Riparian		
										Operations Facilities	ROW Maintenance <sup>1/</sup>	Total Impacts	Operations Facilities	ROW Maintenance <sup>1/</sup>	Total Impacts	Operations Facilities	ROW Maintenance <sup>1/</sup>	Total Impacts	Operations Facilities	ROW Maintenance <sup>1/</sup>	Total Impacts
8	Revised Proposed Route	129.7	64 [1]	3 [1]	<1			1	<1										0.6	1.6	2.2
	Route 8G	146.9	85 [2]	21 [1]	2				<1							3			0.2 [0.1]	1.0	1.2 [0.1]
	Route 8H	137.5	25 [11]	3 [2]	<1 [<1]				t <sup>2/</sup>								2 [2]	2 [2]	0.2 [0.2]		0.2 [0.2]
9	Revised Proposed Route	165.3	52 [11]	4 [2]	1 [1]			8	t <sup>2/</sup>							t <sup>2/</sup>	3 [2]	3 [2]	0.2 [0.2]		0.2 [0.2]
	Segment 9 FEIS Proposed Route	162.2	59 [5]	33 [2]	9 [<1]	t <sup>2/</sup>		8	<1							t <sup>2/</sup>	1	1	0.9 [0.2]	t <sup>2/</sup>	0.9 [0.2]
	Route 9K	174.6	113 [2]	21 [1]	2			8	t <sup>2/</sup>							3	1	4	0.2 [0.1]	1.4	1.6 [0.1]
	Proposed – Comparison portion for Toana Road Variations 1/1-A	8.7	7					<1								t <sup>2/</sup>	1	1			
	Toana Road Variation 1	8.5	5																		
	Toana Road Variation 1-A	8.9	5																		
8/9	Comparison portion for the Alternative 5 WWE Corridor and Alternative 5 Helicopter-assisted Construction Variations	66.1 <sup>3/</sup>	51 [<1]	16 [1]	<1				t <sup>2/</sup>												2.4
	Alternative 5 WWE Corridor Variation	62.2 <sup>4/</sup>	31 [7]	25 [4]	3 [t <sup>2/</sup> ]	t <sup>2/</sup>			t <sup>2/</sup>												
	Alternative 5 Helicopter-assisted Construction Variation	66.1 <sup>3/</sup>	27 [<1]	12 [1]	<1				t <sup>2/</sup>												2.4

Table D.6-3. Acreage of Operations Impacts to Vegetation cont.

Segment Number	Revised Proposed Routes, Other Routes, and Route Variations	Segment Length in Miles	Disturbed Sagebrush	Disturbed Grassland	Disturbed / Developed	Agriculture	Water	No Vegetation Data	Total Natural Vegetation			Total Disturbed and Semi-natural Vegetation	Total Other Cover Types	Grand Total		
									Operations Facilities	ROW Maintenance <sup>1/</sup>	Total Impacts			Operations Facilities	ROW Maintenance <sup>1/</sup>	Total Impacts
8	Revised Proposed Route	129.7	62 [3]	66 [11]	24 [12]	16	<1	1	69 [2]	2	71 [2]	168 [26]	1	238 [28]	2	240 [28]
	Route 8G	146.9	61 [3]	108 [21]	33 [1]	12 [t <sup>2/</sup> ]	<1	<1	111 [3]	1	112 [3]	214 [25]	<1	325 [28]	1	326 [28]
	Route 8H	137.5	66 [21]	124 [47]	22 [7]	15 [<1]	t <sup>2/</sup> [t <sup>2/</sup> ]	t <sup>2/</sup> [t <sup>2/</sup> ]	29 [13]	2 [2]	31 [15]	227 [74]	t <sup>2/</sup> [t <sup>2/</sup> ]	256 [88]	2 [2]	258 [89]
9	Revised Proposed Route	165.3	84 [21]	149 [46]	25 [7]	10 [<1]	<1		65 [14]	3 [2]	68 [16]	268 [74]	<1	333 [88]	3 [2]	336 [90]
	Segment 9 FEIS Proposed Route	162.2	71 [2]	131 [17]	12 [<1]	35 [t <sup>2/</sup> ]	<1	<1 [t <sup>2/</sup> ]	111 [8]	1	112 [8]	248 [20]	<1 [t <sup>2/</sup> ]	360 [28]	1	361 [28]
	Route 9K	174.6	83 [3]	135 [20]	37 [1]	8 [t <sup>2/</sup> ]	<1	<1	148 [3]	2	150 [3]	263 [24]	<1	411 [27]	2	413 [27]
	Proposed – Comparison portion for Toana Road Variations 1/1-A	8.7	1	6	2				7	1	8	9		16	1	17
	Toana Road Variation 1	8.5	6	1	3				5		5	10		16		16
	Toana Road Variation 1-A	8.9	3	2	1				5		5	6		11		11
8/9	Comparison portion for the Alternative 5 WWE Corridor and Alternative 5 Helicopter-assisted Construction Variations	66.1 <sup>3/</sup>	12 [<1]	2 [<1]	16 [<1]	1	t <sup>2/</sup>		67 [2]	2	70	31 [<1]	t <sup>2/</sup>	99 [3]	2	101 [3]
	Alternative 5 WWE Corridor Variation	62.2 <sup>4/</sup>	15 [<1]	2 [t <sup>2/</sup> ]	8 [<1]	1	t <sup>2/</sup>		59 [11]		59	26 [2]	t <sup>2/</sup>	86 [13]	2	86 [13]
	Alternative 5 Helicopter-assisted Construction Variation	66.1 <sup>3/</sup>	10 [<1]	2 [<1]	16 [<1]	<1			40 [2]	2	42	29 [<1]		69 [3]		71 [3]

Notes: Acreages have been rounded to the nearest whole acre; therefore, numbers are inexact and columns/rows may not sum exactly

Blank cells indicate zero acres or null value

The numbers in square brackets "[ ]" correspond to impacts that would occur on BLM-managed lands within the SRBOP

<sup>1/</sup> ROW Clearing limited to tall vegetation that may impact transmission line safety

<sup>2/</sup> "t" indicates only a trace amount (<0.1 acre) of impact

<sup>3/</sup> This variation consists of approximately 32.9 miles of Route 8G and 33.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

<sup>4/</sup> This variation consists of approximately 31.0 miles of Route 8G and 31.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

Source: Tetra Tech 2008-2016; BLM 2010, 2014; Tetra Tech 2016



Table D.6-4.            (This table has been removed as it is not relevant to the Supplemental Environmental Impact Statement)

Table D.6-5. Acreage of Construction Impacts to Vegetation on Federal Lands

Segment Number	Revised Proposed Routes, Other Routes, and Route Variations	Bureau of Land Management Field Office	Shrubland	Forest/Woodland		Wetland/Riparian		Grassland	Other Cover Types	Total Impacts
				Construction Facilities	ROW Clearing	Construction Facilities	ROW Clearing			
8	Revised Proposed Route	Four Rivers	366			0.7		359	31	756
		Owyhee	52			0.1		18	5	74
		Shoshone	321			0.1		104	12	436
	Proposed – Existing 500-kV Removal <sup>1/</sup>	Four Rivers						3	<1	3
	Route 8G	Bruneau	469	9		0.6		128	24	631
		Four Rivers	40			0.3		126	4	170
		Jarbridge	159			0.3		336	<1	496
		Owyhee	466			0.1		6	36	507
		Shoshone	100					53	17	170
	Route 8G – Existing 500-kV Removal	Jarbridge	2						<1	3
	Route 8H	Bruneau	2					<1	<1	3
		Four Rivers	442	<1	1	0.7		585	29	1,058
		Jarbridge	154			0.3		348	8	511
		Owyhee	141			0.1		9	4	153
		Shoshone	107					59	17	183
	Route 8H – Existing 138-kV Removal	Four Rivers	14					24	2	39
	Route 8H – Existing 500-kV Removal	Jarbridge	2						<1	2
9	Revised Proposed Route	Bruneau	2					<1	<1	3
		Burley	202					229	24	455
		Four Rivers	397	<1	1	0.8		530	26	955
		Jarbridge	351	<1	<1	0.1		531	25	908
		Owyhee	122					5	6	132
	Proposed – Existing 138-kV Removal <sup>1/</sup>	Four Rivers	14					24	2	39
	Segment 9 FEIS Proposed Route	Bruneau	215					89	17	321
		Burley	211			t <sup>2/</sup>		298	10	520
		Four Rivers	101			0.7		166	4	271
		Jarbridge	378	<1	<1	0.4		599	26	1,005
		Owyhee	367			t <sup>2/</sup>		4	4	375
	Route 9K	Bruneau	492	9		0.6		125	22	648
		Burley	202					229	24	455
		Four Rivers	37			0.3		120	4	161
		Jarbridge	370	<1	<1	0.1		545	25	940
		Owyhee	461					2	36	499
	Proposed - Comparison portion for Toana Road Variations 1/1-A	Jarbridge	58	<1	<1			82	13	153
	Toana Road Variation 1	Jarbridge	104					23	16	143
	Toana Road Variation 1-A	Jarbridge	99					19	10	128
8/9	Comparison portion for the Alternative 5 WWE Corridor and Alternative 5 Helicopter-assisted Construction Variations	Bruneau	21					7	2	29
		Four Rivers	7					<1	2	10
		Owyhee	867			<1		6	43	915
	Alternative 5 WWE Corridor Variation	Bruneau	25					3	2	30
		Four Rivers	127					<1	11	138
		Owyhee	728			<1		6	17	751
	Alternative 5 Helicopter-assisted Construction Variation	Bruneau	21					7	2	30
		Four Rivers	8					<1	2	10
		Owyhee	720			<1		13	47	780

Table D.6-5. Acreage of Construction Impacts to Vegetation on Federal Lands

Segment Number	Revised Proposed Routes and Other Routes	Other Federal Lands	Shrubland	Forest/Woodland		Wetland/Riparian		Grassland	Other Cover Types	Total Impacts
				Construction Facilities	ROW Clearing	Construction Facilities	ROW Clearing			
8	Revised Proposed Route	Bureau of Reclamation	53					8	7	67
	Route 8G	Military Reservation/Corps of Engineers	4					3		7
	Route 8H	Bureau of Reclamation						<1	t <sup>2/</sup>	<1
		Military Reservation/Corps of Engineers	4					3	t <sup>2/</sup>	7
9	Revised Proposed Route	Bureau of Reclamation						<1		<1
		Military Reservation/Corps of Engineers	4					3		7
	Segment 9 FEIS Proposed Route	Military Reservation/Corps of Engineers	4					3	t <sup>2/</sup>	7
	Route 9K	Military Reservation/Corps of Engineers	4					3		7
8/9	Comparison portion for the Alternative 5 WWE Corridor and Alternative 5 Helicopter-assisted Construction Variations	N/A								
	Alternative 5 WWE Corridor Variation	N/A								
	Alternative 5 Helicopter-assisted Construction Variation	N/A								

Notes: Acreages have been rounded to the nearest whole acre or, in the case of wetlands, the nearest tenth of an acre; therefore, numbers are inexact and columns/rows may not sum exactly  
Blank cells indicate zero acres or null value

<sup>1/</sup> Portions of the disturbance areas may overlap; therefore, actual effects may be less than presented

<sup>2/</sup> "t" indicates only a trace amount (<0.1 acre) of occupancy

Source: Tetra Tech 2008-2016; BLM 2010, 2014; Tetra Tech 2016

Table D.6-6. Acreage of Operations Impacts to Vegetation on Federal Lands

Segment Number	Revised Proposed Routes, Other Routes, and Route Variations	Bureau of Land Management Field Office	Shrubland	Forest/Woodland		Wetland/Riparian		Grassland	Other Cover Types	Total Impacts
				Operations Facilities	ROW Maintenance	Operations Facilities	ROW Maintenance			
8	Revised Proposed Route	Four Rivers	39			t <sup>2/</sup>		25	13	77
		Owyhee	5					2	1.6	8
		Shoshone	36			t <sup>2/</sup>		12	2	50
	Proposed – Existing 500-kV Removal <sup>1/</sup>		No BLM Land Crossed							
	Route 8H	Bruneau	<1					<1	t <sup>2/</sup>	<1
		Four Rivers	37		2	0.2		50	7	95
		Jarbidge	14			t <sup>2/</sup>		41	2	57
		Owyhee	16					2	2	19
		Shoshone	9					5	5	20
9	Revised Proposed Route	Bruneau	<1					<1	t <sup>2/</sup>	<1
		Burley	19					26	7	52
		Four Rivers	33	t <sup>2/</sup>	2	0.2		52	7	94
		Jarbidge	51	t <sup>2/</sup>	1	t <sup>2/</sup>		67	4	122
		Owyhee	16					1	2	20
	Segment 9 FEIS Proposed Route	Bruneau	27					8	2	37
		Burley	22					33	2	57
		Four Rivers	11			0.2		17	<1	29
		Jarbidge	51	t <sup>2/</sup>	1	t <sup>2/</sup>		70	4	126
		Owyhee	38			t <sup>2/</sup>		<1	<1	39
	Proposed – Comparison portion for Toana Road Variations 1/1-A	Jarbidge	8	t <sup>2/</sup>	1	t <sup>2/</sup>		6	2	17
	Toana Road Variation 1	Jarbidge	11					2	3	16
	Toana Road Variation 1-A	Jarbidge	8					2	1	11
	Proposed – Existing 138-kV Removal <sup>1/</sup>		No BLM Land Crossed							
8/9	Comparison portion for the Alternative 5 WWE Corridor and Alternative 5 Helicopter-assisted Construction Variations	Bruneau	<1					<1	<1	2
		Four Rivers	2					<1	<1	3
		Owyhee	65					<1	10	77
	Alternative 5 WWE Corridor Variation	Bruneau	1					<1	<1	2
		Four Rivers	12					t	<1	13
		Owyhee	47					<1	5	53
	Alternative 5 Helicopter-assisted Construction Variation	Bruneau	<1					<1	<1	2
		Four Rivers	2					<1	<1	3
		Owyhee	38					<1	11	50

Segment Number	Revised Proposed Routes	Other Federal Lands	Shrubland	Forest/Woodland		Wetland/Riparian		Grassland	Other Cover Types	Total Impacts
				Operations Facilities	ROW Maintenance	Operations Facilities	ROW Maintenance			
8	Revised Proposed Route	Bureau of Reclamation	4					1	3	9
	Route 8H	Military Reservation/Corps of Engineers	1					<1		2
9	Revised Proposed Route	Military Reservations/Corps of Engineers	1					<1		2
	Segment 9 FEIS Proposed Route	Military Reservation/Corps of Engineers	1					<1		2
8/9	Comparison portion for the Alternative 5 WWE Corridor and Alternative 5 Helicopter-assisted Construction Variations	N/A								
	Alternative 5 WWE Corridor Variation	N/A								
	Alternative 5 Helicopter-assisted Construction Variation	N/A								

Notes: Acreages have been rounded to the nearest whole acre or, in the case of wetlands, the nearest tenth of an acre; therefore, numbers are inexact and columns/rows may not sum exactly  
Blank cells indicate zero acres or null value

<sup>1/</sup> Portions of the disturbance areas may overlap; therefore, actual effects may be less than presented

<sup>2/</sup> "t" indicates only a trace amount (<0.1 acre) of occupancy

Source: Tetra Tech 2008-2016; BLM 2010, 2014; Tetra Tech 2016

Table D.6-7. Wildland Fires Within the Analysis Area

Segment Number	Revised Proposed Routes, Other Routes, and Route Variations	Segment Length in Miles	Name of Fire	Date of Fire	Total Acres of Fire	Acres of Analysis Area Disturbed by the Fire
8	Revised Proposed Route	129.7	Benwalk	7/13/2012	29,101	350
			Blair	8/17/2011	39,587	311
			Bliss Point 2	9/30/2013	2	<1
			Bray Lake	7/8/2013	2,401	5
			Ditto	7/7/2012	6,181	5
			Highway 20	6/5/2012	6,134	3
			Hwy 46 MM 103	9/2/2011	4,977	1
			Kave	6/11/2012	649	13
			May	8/1/2014	3,074	54
			Pony Complex	8/14/2013	591	<1
			Power	8/16/2011	1,092	18
			Shoestring	8/29/2008	1,435	39
			Soda	8/18/2015	283,400	36
			South Trail	7/25/2010	3,831	74
			Union	8/16/2011	10,533	127
			Walker	10/1/2011	238	15
			Westpark	7/15/2014	16	<1
	Route 8G	146.9	Bliss	8/16/2008	1,982	13
			Browns Gulch	7/17/2013	4,936	147
			Crowbar	8/7/2010	30,076	35
			Hot Springs 2	10/1/2011	10,397	183
			Hwy 46 MM 103	9/2/2011	4,977	<1
			Kinyon Road	7/11/2012	234,790	213
			Long Butte	8/25/2010	306,012	374
			Love	7/20/2011	44	1
			Lover	8/10/2011	101	<1
			MM43 Hwy 78	7/9/2012	783	5
			Sailor Creek	6/20/2010	10,064	20
			Soda	8/18/2015	283,400	127
			South Indian	7/15/2012	14,097	217
			Tuana	7/5/2012	194	6
			Windmill	8/5/2011	17,386	197
			Long Butte	8/25/2010	306,012	58
	Proposed – Existing 500-kV Removal <sup>1/</sup>	1.9	Tuana	7/5/2012	194	6
	Route 8H	137.5	Bliss	8/16/2008	1,982	13
			Browns Gulch	7/17/2013	4,936	151
			Chattin Flat	5/15/2012	182	13
			Con Shea	6/18/2012	8,905	61
			Grippy	6/25/2015	242	6
			Hot Springs 2	10/1/2011	10,397	166
			Hwy 46 MM 103	9/2/2011	4,977	<1
			Jack Creek	8/11/2010	23	2
			Kinyon Road	7/11/2012	234,790	315
			Long Butte	8/25/2010	306,012	387
			Soda	8/18/2015	283,400	92
			South Indian	7/15/2012	14,097	322
			Strike	7/23/2012	222	21
			Tuana	7/5/2012	194	5
			Windmill	8/5/2011	17,386	201
	Route 8H – Existing 138-kV Removal	25.7	(no fires occurred)			
	Route 8H – Existing 500-kV Removal	1.9	Long Butte	8/25/2010	306,012	10
			Tuana	7/5/2012	194	1

Table D.6-7. Wildland Fires Within the Analysis Area cont.

Segment Number	Revised Proposed Routes, Other Routes, and Route Variations	Segment Length in Miles	Name of Fire	Date of Fire	Total Acres of Fire	Acres of Analysis Area Disturbed by the Fire
9	Revised Proposed Route	165.3	Balanced Road	6/3/2012	6,423	25
			Balanced Rock	8/21/2013	304	21
			Berger	8/9/2012	77	<1
			Blue Gulch	6/20/2013	<1	<1
			Browns Gulch	7/17/2013	4,936	136
			Chattin Flat	5/15/2012	182	12
			Con Shea	6/18/2012	8,905	58
			Cottonwood Creek	6/21/2012	18	<1
			East Hollister	8/6/2012	568	22
			Flint	7/31/2010	729	10
			Griffy	6/25/2015	242	9
			Hot Springs 2	10/1/2011	10,397	147
			Jack Creek	8/11/2010	23	2
			Kinyon Road	7/11/2012	234,790	443
			Long Butte	8/25/2010	306,012	726
			Soda	8/18/2015	283400	109
			South Indian	7/15/2012	14,097	272
			Strike	7/23/2012	222	21
			West Hollister	7/1/2013	3,025	44
	Segment 9 FEIS Proposed Route	162.2	Balanced Road	6/3/2012	6,423	25
			Balanced Rock	8/21/2013	304	21
			Berger	8/9/2012	77	<1
			Blue Gulch	6/20/2013	<1	<1
			Browns Gulch	7/17/2013	4,936	143
			Cottonwood Creek	6/21/2012	18	<1
			East Hollister	8/6/2012	568	22
			Flint	7/31/2010	729	15
			Griffy	6/25/2015	242	9
			Hot Springs 2	10/1/2011	10,397	117
			Kinyon Road	7/11/2012	234,790	367
			Long Butte	8/25/2010	306,012	772
			Love	7/20/2011	44	4
			MM43 Hwy 78	7/9/2012	783	1
			Soda	8/18/2015	283,400	141
			South Indian	7/15/2012	14,097	171
			West Hollister	7/1/2013	3,025	55
	Route 9K	174.6	Balanced Road	6/3/2012	6,423	25
			Balanced Rock	8/21/2013	304	21
			Berger	8/9/2012	77	1
			Blue Gulch	6/20/2013	<1	<1
			Browns Gulch	7/17/2013	4,936	136
			Cottonwood Creek	6/21/2012	18	<1
			Crowbar	8/7/2010	30,076	32
			East Hollister	8/6/2012	568	22
			Flint	7/31/2010	729	10
			Hot Springs 2	10/1/2011	10,397	178
			Kinyon Road	7/11/2012	234,790	348
			Long Butte	8/25/2010	306,012	726
			Lover	8/10/2011	101	<1
			MM43 Hwy 78	7/9/2012	783	<1
			Sailor Creek	6/20/2010	10,064	24
			Soda	8/18/2015	283,400	160
			South Indian	7/15/2012	14,097	175
			West Hollister	7/1/2013	3,025	44

Table D.6-7. Wildland Fires Within the Analysis Area cont.

Segment Number	Revised Proposed Routes, Other Routes, and Route Variations	Segment Length in Miles	Name of Fire	Date of Fire	Total Acres of Fire	Acres of Analysis Area Disturbed by the Fire
9 (cont.)	Proposed – Comparison portion for Toana Road Variations 1/1-A	8.7	Balanced Road	6/3/2012	6,423	25
			Balanced Rock	8/21/2013	304	20
			Kinyon Road	7/11/2012	234,790	93
	Toana Road Variation 1	8.5	Balanced Road	6/3/2012	6,423	60
			Balanced Rock	8/21/2013	304	20
			Kinyon Road	7/11/2012	234,790	276
			Long Butte	8/25/2010	306,012	<1
			Simplot	7/27/2013	292	2
	Toana Road Variation 1-A	8.9	Balanced Road	6/3/2012	6,423	30
			Balanced Rock	8/21/2013	304	20
			Kinyon Road	7/11/2012	234,790	285
			Long Butte	8/25/2010	306,012	<1
8/9	Comparison portion for the Alternative 5 WWE Corridor and Alternative 5 Helicopter-assisted Construction Variations	66.1 <sup>2/</sup>	MM43 Hwy 78	7/9/2012	783	5
			Soda	8/18/2015	283,400	318
	Alternative 5 WWE Corridor Variation	62.2 <sup>3/</sup>	Griffy	6/25/2015	242	11
			MM43 Hwy 78	7/9/2012	783	<1
			Soda	8/18/2015	283,400	218
	Alternative 5 Helicopter-assisted Construction Variation	66.1 <sup>2/</sup>	MM43 Hwy 78	7/9/2012	783	5
			Soda	8/18/2015	283,400	314

Notes: Acreages have been rounded to the nearest whole acre; therefore, numbers are inexact and columns/rows may not sum exactly

Blank cells indicate zero miles or null value

<sup>1/</sup> Portions of the disturbance areas may overlap; therefore, actual effects may be less than presented

<sup>2/</sup> This variation consists of approximately 32.9 miles of Route 8G and 33.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

<sup>3/</sup> This variation consists of approximately 31.0 miles of Route 8G and 31.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

Source: GEOMAC 2016



**Table D.8-1.** Idaho Designated Noxious Weed Species Potentially Present in the Analysis Area for the Revised Proposed Routes

Common Name	Scentific Name	State of Idaho Noxious Weed Category <sup>2/</sup>	Segments where Potentially Present <sup>3/</sup>
Black henbane	<i>Hyoscyamus niger</i> <sup>1/</sup>	Control	8, 9
Bohemian knotweed	<i>Polygonum bohemicum</i>	Control	8, 9
Buffalobur	<i>Solanum rostratum</i>	Control	8,9
Canada thistle	<i>Cirsium arvense</i> <sup>1/</sup>	Containment	8, 9
Common reed	<i>Phragmites australis</i>	Control	8, 9
Curlyleaf pondweed	<i>Potamogeton crispus</i>	Containment	8, 9
Dalmatian toadflax	<i>Linaria dalmatica</i> <sup>1/</sup>	Containment	8, 9
Diffuse knapweed	<i>Centaurea diffusa</i> <sup>1/</sup>	Containment	8, 9
Dyer's woad	<i>Isatis tinctoria</i> <sup>1/</sup>	Control	8, 9
Eurasian watermilfoil	<i>Myriophyllum spicatum</i> <sup>1/</sup>	Control	8, 9
Field bindweed	<i>Convolvulus arvensis</i> <sup>1/</sup>	Containment	8, 9
Giant Knotweed	<i>Polygonum sachalinense</i>	Control	8, 9
Hoary alyssum	<i>Berteroa incana</i>	Containment	8, 9
Houndstongue	<i>Cynoglossum officinale</i> <sup>1/</sup>	Containment	8, 9
Hydrilla	<i>Hydrilla verticillata</i> <sup>1/</sup>	EDRR	8, 9
Japanese Knotweed	<i>Polygonum cuspidatum</i>	Control	8, 9
Johnsongrass	<i>Sorghum halepense</i> <sup>1/</sup>	Control	8, 9
Jointed goatgrass	<i>Aegilops cylindrica</i> <sup>1/</sup>	Containment	8, 9
Leafy spurge	<i>Euphorbia esula</i> <sup>1/</sup>	Containment	8, 9
Mediterranean sage	<i>Salvia aethiopis</i> <sup>1/</sup>	Control	8
Milium	<i>Milium vernale</i>	Containment	8
Musk thistle	<i>Carduus nutans</i> <sup>1/</sup>	Control	8, 9
Orange hawkweed	<i>Hieracium aurantiacum</i> <sup>1/</sup>	Control	8, 9

<sup>1/</sup> Species on the BLM national invasive species list (BLM 2008e)

<sup>2/</sup> Idaho noxious weed categories are explained in Section 3.8.1.5 of the FEIS

<sup>3/</sup> Distribution based on Invaders database (University of Montana-Missoula 2015), PLANTS database (NRCS 2015c), and ISDA (2015)

Common Name	Scentific Name	State of Idaho Noxious Weed Category <sup>2/</sup>	Segments where Potentially Present <sup>3/</sup>
Oxeye daisy	<i>Leucanthemum vulgare</i> <sup>1/</sup>	Containment	8, 9
Parrotfeather Milfoil	<i>Myriophyllum aquaticum</i>	Control	8, 9
Perennial pepperweed	<i>Lepidium latifolium</i> <sup>1/</sup>	Containment	8, 9
Perennial sowthistle	<i>Sonchus arvensis</i> <sup>1/</sup>	Control	8, 9
Poison hemlock	<i>Conium maculatum</i> <sup>1/</sup>	Containment	8, 9
Puncture vine	<i>Tribulus terrestris</i>	Containment	8, 9
Purple loosestrife	<i>Lythrum salicaria</i> <sup>1/</sup>	Containment	8, 9
Purple starthistle	<i>Centaurea calcitrapa</i>	EDRR	8, 9
Rush skeletonweed	<i>Chondrilla juncea</i> <sup>1/</sup>	Containment	8, 9
Russian knapweed	<i>Acroptilon repens</i> <sup>1/</sup>	Control	8, 9
Salt cedar, tamarisk	<i>Tamarix</i> spp. <sup>1/</sup>	Containment	8, 9
Scotch broom	<i>Cytisus scoparius</i> <sup>1/</sup>	Control	8, 9
Scotch thistle	<i>Onopordum acanthium</i> <sup>1/</sup>	Containment	8, 9
Spotted knapweed	<i>Centaurea stoebe</i> ( <i>C. maculosa</i> ) <sup>1/</sup>	Containment	8, 9
Spring millet grass	<i>Milium vernale</i>	Containment	8
Syrian beancaper	<i>Zygophyllum fabago</i> <sup>1/</sup>	EDRR	8
Vipers bugloss	<i>Echium vulgare</i> <sup>1/</sup>	Control	8, 9
White bryony	<i>Bryonia alba</i>	Containment	8, 9
Whitetop, hoary cress	<i>Cardaria draba</i> <sup>1/</sup>	Containment	8, 9
Yellowflag iris	<i>Iris pseudacorus</i>	Containment	8, 9
Yellow hawkweed	<i>Hieracium caespitosum</i> <sup>1/</sup>	Control	8
Yellow starthistle	<i>Centaurea solstitialis</i> <sup>1/</sup>	Containment	8, 9
Yellow toadflax	<i>Linaria vulgaris</i> <sup>1/</sup>	Containment	8, 9

Table D.9-1. Acreage of Construction Impacts to Wetlands and Riparian Areas

Segment Number	Revised Proposed Routes, Other Routes, and Route Variations	Segment Length in miles	Herbaceous Wetlands	Shrub Wetlands	Forested Wetlands			Mixed Wetlands	Total Wetlands			Herbaceous Riparian	Shrub Riparian	Forested Riparian			Mixed Riparian	Total Riparian			Total Wetlands and Riparian		
			Construction Facilities	Construction Facilities	Construction Facilities	ROW Clearing <sup>1/</sup>	Total Construction Impacts	Construction Facilities	Construction Facilities	ROW Clearing <sup>1/</sup>	Total Construction Impacts	Construction Facilities	Construction Facilities	Construction Facilities	ROW Clearing <sup>1/</sup>	Total Construction Impacts	Construction Facilities	Construction Facilities	ROW Clearing <sup>1/</sup>	Total Construction Impacts	Construction Facilities	ROW Clearing <sup>1/</sup>	Total Construction Impacts
8	Revised Proposed Route	129.7	3.1	0.1					3.2		3.2	0.1	0.9		1.6	1.6	1.8	2.8	1.6	4.4	6.0	1.6	7.6
	Proposed – Existing 500-kV Removal <sup>2/</sup>	1.1																					
	Route 8G	146.9	0.3 [0.3]	0.3					0.6 [0.3]		0.6 [0.3]		0.3		1.0	1.0	0.7	0.9	1.0	1.9	1.5 [0.3]	1.0	2.5 [0.3]
	Route 8G – Existing 500-kV Removal	1.9																					
	Route 8H	137.5	0.3 [0.3]	0.3				0.2 [0.2]	0.8 [0.5]		0.8 [0.5]		1.6 [0.2]	t <sup>3/</sup>		t <sup>3/</sup>	0.3	1.9 [0.2]		1.9 [0.2]	2.7 [0.7]		2.7 [0.7]
	Route 8H – Existing 138-kV Removal	25.7																					
	Route 8H – Existing 500-kV Removal	1.9																					
9	Revised Proposed Route	165.3	0.7 [0.3]					0.2 [0.2]	0.9 [0.6]		0.9 [0.6]	0.6	1.5 [0.3]				0.2	2.3 [0.2]		2.3 [0.2]	3.2 [0.8]		3.2 [0.8]
	Proposed – Existing 138-kV Removal <sup>2/</sup>	25.7																					
	Segment 9 FEIS Proposed Route	162.2	1.1 [0.2]	0.4 [0.4]				0.2	1.7 [0.7]		1.7 [0.7]	0.4	2.9 [t <sup>3/</sup> ]	0.1	t <sup>3/</sup>	0.1	0.9	4.3 [0.1]	t <sup>3/</sup>	4.3 [0.1]	6.0 [0.6]	t <sup>3/</sup>	6.0 [0.6]
	Route 9K	174.6	0.7 [0.3]						0.7 [0.3]		0.7 [0.3]	0.6	0.3		1.4	1.4	0.5	1.4	1.4	2.8	2.1 [0.3]	1.4	3.5 [0.3]
	Proposed – Comparison portion for Toana Road Variations 1/1-A	8.7																					
	Toana Road Variation 1	8.5																					
	Toana Road Variation 1-A	8.9																					
8/9	Comparison portion for the Alternative 5 WWE Corridor and Alternative 5 Helicopter-assisted Construction Variations	66.1 <sup>4/</sup>										t <sup>3/</sup>	0.2		2.4			0.2	2.4	2.6	0.2	2.4	2.6
	Alternative 5 WWE Corridor Variation	62.2 <sup>5/</sup>										t <sup>3/</sup>	0.3					0.3		0.3	0.3		0.3
	Alternative 5 Helicopter-assisted Construction Variation	66.1 <sup>4/</sup>										t <sup>3/</sup>	0.2		2.4			0.2	2.4	2.6	0.2	2.4	2.6

Notes: Due to permit criteria, acreages reported here are rounded to tenths of an acre; therefore, numbers are inexact and columns/rows may not sum exactly

Blank cells indicate zero acres or null value

This table is based on Project-specific vegetation/wetland data, and the values reported herein may differ from the values reported specifically for National Forests within this EIS, since National Forest System data are used when addressing Forest-specific impacts.

The numbers in square brackets "[ ]" correspond to impacts that would occur on BLM-managed lands within the SRBOP

<sup>1/</sup> ROW Clearing limited to tall vegetation that may impact transmission line safety

<sup>2/</sup> Portions of the disturbance areas may overlap; therefore, actual effects may be less than presented

<sup>3/</sup> "t" indicates only a trace amount (<0.1 acre) of impact

<sup>4/</sup> This variation consists of approximately 32.9 miles of Route 8G and 33.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

<sup>5/</sup> This variation consists of approximately 31.0 miles of Route 8G and 31.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

Source: Tetra Tech 2008-2016; BLM 2010, 2014; Tetra Tech 2016

Table D.9-2. Acreage of Operations Impacts to Wetlands and Riparian Areas

Segment Number	Revised Proposed Routes, Other Routes, and Route Variations	Segment Length in miles	Herbaceous Wetlands	Shrub Wetlands	Forested Wetlands			Mixed Wetlands	Total Wetlands			Herbaceous Riparian	Shrub Riparian	Forested Riparian			Mixed Riparian	Total Riparian			Total Wetlands and Riparian		
			Operations Facilities	Operations Facilities	Operations Facilities	ROW Maintenance <sup>1/</sup>	Total Operation Impacts	Operations Facilities	Operations Facilities	ROW Maintenance <sup>1/</sup>	Total Operation Impacts	Operations Facilities	Operations Facilities	Operations Facilities	ROW Maintenance <sup>1/</sup>	Total Operation Impacts (acres)	Operations Facilities	Operations Facilities	ROW Maintenance <sup>1/</sup>	Total Operation Impacts	Operations Facilities	ROW Maintenance <sup>1/</sup>	Total Operation Impacts
8	Revised Proposed Route	129.7	0.4						0.4		0.4		0.1		1.6	1.6	0.1	0.2	1.6	1.8	0.6	1.6	2.2
	Proposed – Existing 500-kV Removal <sup>2/</sup>	1.1																					
	Route 8G	146.9	0.1 [0.1]	t <sup>3/</sup>					0.1 [0.1]		0.1 [0.1]		t <sup>3/</sup>		1.0	1.0	t <sup>3/</sup>	0.1	1.0	1.1	0.2 [0.1]	1.0	1.2 [0.1]
	Route 8G – Existing 500-kV Removal	1.9																					
	Route 8H	137.5	0.1 [0.1]	t <sup>3/</sup>				t <sup>3/</sup> [t <sup>3/</sup> ]	0.1 [0.1]		0.1 [0.1]		t <sup>3/</sup> [t <sup>3/</sup> ]	t <sup>3/</sup>		t <sup>3/</sup>		t <sup>3/</sup> [t <sup>3/</sup> ]		0.1 [0.1]	0.2 [0.1]		0.2 [0.1]
9	Revised Proposed Route	165.3	0.1 [0.1]					t <sup>3/</sup> [t <sup>3/</sup> ]	0.1 [0.1]		0.1 [0.1]	t <sup>3/</sup>	0.1 [0.1]					0.1 [0.1]		0.1 [0.1]	0.2 [0.2]		0.2 [0.2]
	Proposed – Existing 138-kV Removal <sup>2/</sup>	25.7																					
	Segment 9 FEIS Proposed Route	162.2	t <sup>3/</sup> [t <sup>3/</sup> ]	0.1 [0.1]				t <sup>3/</sup>	0.3 [0.2]		0.3 [0.2]		0.5 [t <sup>3/</sup> ]		t <sup>3/</sup>	t <sup>3/</sup>	0.1	0.7 [t <sup>3/</sup> ]	t <sup>3/</sup>	0.7 [t <sup>3/</sup> ]	0.9 [0.2]	t <sup>3/</sup>	0.9 [0.2]
	Route 9K	174.6	0.1 [0.1]						0.1 [0.1]		0.1 [0.1]	t <sup>3/</sup>	t <sup>3/</sup>		1.4	1.4	0.1	0.1	1.4	1.5	0.2 [0.1]	1.4	1.6 [0.1]
	Proposed – Comparison portion for Toana Road Variations 1/1-A	8.7																					
	Toana Road Variation 1	8.5																					
	Toana Road Variation 1-A	8.9																					
8/9	Comparison portion for the Alternative 5 WWE Corridor and Alternative 5 Helicopter-assisted Construction Variations	66.1 <sup>4/</sup>													2.4				2.4			2.4	2.4
	Alternative 5 WWE Corridor Variation	62.2 <sup>5/</sup>																					
	Alternative 5 Helicopter-assisted Construction Variation	66.1 <sup>4/</sup>													2.4				2.4			2.4	2.4

Notes: Due to permit criteria, acreages reported here are rounded to tenths of an acre; therefore, numbers are inexact and columns/rows may not sum exactly  
Blank cells indicate zero acres or null value  
This table is based on Project-specific vegetation/wetland data, and the values reported herein may differ from the values reported specifically for National Forests within this EIS, since National Forest System data are used when addressing Forest-specific impacts.  
The numbers in square brackets "[ ]" correspond to impacts that would occur on BLM-managed lands within the SRBOP

<sup>1/</sup> ROW maintenance limited to tall vegetation that may impact transmission line safety  
<sup>2/</sup> Portions of the disturbance areas may overlap; therefore, actual effects may be less than presented  
<sup>3/</sup> "t" indicates only a trace amount (<0.1 acre) of impact  
<sup>4/</sup> This variation consists of approximately 32.9 miles of Route 8G and 33.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.  
<sup>5/</sup> This variation consists of approximately 31.0 miles of Route 8G and 31.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

Source: Tetra Tech 2008-2016; BLM 2010, 2014; Tetra Tech 2016

Table D.10-1. Miles of Big Game Crossed by the Revised Proposed Routes, Other Routes, and Route Variations

Segment Number	Revised Proposed Routes, Other Routes, and Route Variations	Segment Length in Miles	Bighorn Sheep Habitat	Elk Calving Areas	Elk Winter Range	Moose Winter Range	Mule Deer Winter Range	Pronghorn Winter Range
8	Revised Proposed Route	129.7			17.5		45.1	7.4
	Proposed – Existing 500-kV Removal <sup>1/</sup>	1.1						
	Route 8G	146.9					15.4	24.0
	Route 8G – Existing 500-kV Removal	1.9						
	Route 8H	137.5	0.8 [0.6]				15.4	6.8 [0.3]
	Route 8H – Existing 138-kV Removal	25.7						
	Route 8H – Existing 500-kV Removal	1.9						
9	Revised Proposed Route	165.3	0.8 [0.6]				10.0	6.9 [0.3]
	Proposed - Existing 138-kV Removal <sup>1/</sup>	25.7						
	Segment 9 FEIS Proposed Route	162.2					10.0	20.0 [3.1]
	Route 9K	174.6					10.0	24.1
	Proposed - Comparison portion for Toana Road Variations 1/1-A	8.7						
	Toana Road Variation 1	8.5						
	Toana Road Variation 1-A	8.9						
8/9	Comparison portion for the Alternative 5 WWE Corridor and Alternative 5 Helicopter-assisted Construction Variations	66.1 <sup>2/</sup>						48.1
	Alternative 5 WWE Corridor Variation	62.2 <sup>3/</sup>						39.8 [6.0]
	Alternative 5 Helicopter-assisted Construction Variation	66.1 <sup>2/</sup>						48.1

Notes: Mileages have been rounded to the nearest tenth of a mile; therefore, numbers are inexact and columns/rows may not sum exactly

Blank cells indicate zero miles or null value

The numbers in square brackets "[ ]" correspond to impacts that would occur on BLM-managed lands within the SRBOP

<sup>1/</sup> Portions of the disturbance area may overlap; therefore, actual effects may be less than presented.

<sup>2/</sup> This variation consists of approximately 32.9 miles of Route 8G and 33.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

<sup>3/</sup> This variation consists of approximately 31.0 miles of Route 8G and 31.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

Source: Tetra Tech 2009b

Table D.10-2. Known Raptor and Bird of Prey Nest Locations within 1 mile of Project Centerline

Segment Number	Revised Proposed Routes, Other Routes, and Route Variations	Segment Length in Miles	Raptor and Birds of Prey Nests															
			American Kestrel	Bald Eagle	Burrowing Owl	Common Raven	Ferruginous Hawk	Golden Eagle	Great Horned Owl	Long-eared Owl	Northern Goshawk	Northern Harrier	Osprey	Prairie Falcon	Red-tailed Hawk	Short-eared Owl	Swainsons Hawk	Total
8	Revised Proposed Route	129.7		1	47(33) [27]		284(174) [75]	50(39) [22]						105(89) [20]		1(1)	1	489(336) [144]
	Proposed - Existing 500-kV Removal <sup>1/</sup>	1.1			8(8) [8]		58(16) [16]											66(24) [24]
	Route 8G	146.9		1(1)	10(8)		29(28) [12]	164(129)				4(4)		19(19)	1			228(189) [12]
	Route 8G – Existing 500-kV Removal	1.9																
	Route 8H	137.5		1(1)	129 (125) [117]	4 (3) [3]	77 (65) [65]	147 (112)				2 (2)		548 (482) [399]				908 (790) [584]
	Route 8H – Existing 138-kV Removal	25.7			100 (98) [98]	2 (2) [2]	64 (54) [54]							131 (131) [131]				297 (285) [285]
	Route 8H – Existing 500-kV Removal	1.9																
9	Revised Proposed Route	165.3		1(1)	131(125) [117]	4(3) [3]	117(105) [65]	148(145)				2(2)		548(482) [399]			12(12)	963(875) [584]
	Proposed – Existing 138-kV Removal <sup>1/</sup>	25.7			100(98) [98]	2(2) [2]	64(54) [54]							131(131) [131]				297(285) [285]
	Segment 9 FEIS Proposed Route	162.2		1(1)	19 (10) [1]	4 (4)	95 (94) [12]	151 (147)				2 (2)		21 (20) [1]	1		12 (12)	306 (290) [14]
	Route 9K	174.6		1(1)	12(8)		69(68) [12]	166(162)				4(4)		19(19)	1		12(12)	284(274) [12]
	Proposed - Comparison portion for Toana Road Variations 1/1-A	8.7			2		19(19)	3(2)									10(10)	34(31)
	Toana Road Variation 1	8.5					8(8)										2(2)	10(10)
	Toana Road Variation 1-A	8.9					8(8)										2(2)	10(10)
8/9	Comparison portion for the Alternative 5 WWE Corridor and Alternative 5 Helicopter-assisted Construction Variations	66.1 <sup>2/</sup>		1(1)	6(6)		1(1)	48(45)				4(4)		4(4)	1			65(61)
	Alternative 5 WWE Corridor Variation	62.2 <sup>3/</sup>		1(1)	10(7) [1]		2(1)	49(46)				2(2)		6(5) [1]	1			71(62) [2]
	Alternative 5 Helicopter-assisted Construction Variation	66.1 <sup>2/</sup>		1(1)	6(6)		1(1)	48(45)				4(4)		4(4)	1			65(61)

Notes: The numbers in parentheses "( )" indicate the number of species located on federally managed lands

The numbers in square brackets "[ ]" correspond to impacts that would occur on BLM-managed lands within the SRBOP

<sup>1/</sup> Portions of the disturbance areas may overlap; therefore, actual effects may be less than presented

<sup>2/</sup> This variation consists of approximately 32.9 miles of Route 8G and 33.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

<sup>3/</sup> This variation consists of approximately 31.0 miles of Route 8G and 31.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

Source: IDFG 2014; Tetra Tech 2016

Table D.10-3a. Pre- and Post-Construction Levels of Fragmentation Resulting from Roads

Segment Number	Revised Proposed Routes, Other Routes, and Route Variations	Segment Length in Miles	Pre-Construction Conditions									
			Forest Woodlands		Shrublands		Grasslands		Riparian		Agriculture/Disturbed	
			Average Patch Size (Acre)	Patch Count	Average Patch Size (Acre)	Patch Count	Average Patch Size (Acre)	Patch Count	Average Patch Size (Acre)	Patch Count	Average Patch Size (Acre)	Patch Count
8	Revised Proposed Route	129.7			58	5,123	37	6,548	12	203	158	884
	Proposed – Existing 500-kV Removal <sup>1/</sup>	1.1			24	513	48	448			61	57
	Route 8G	146.9	13	1	73	4,292	58	4,894	25	212	211	742
	Route 8G – Existing 500-kV Removal	1.9			48	200	47	184	10	14	449	50
	Route 8H	137.5	13	1	40	5,883	42	6,297	22	385	144	1,267
	Route 8H – Existing 138-kV Removal	25.7			30	2,381	34	2,519	14	146	70	419
	Route 8H – Existing 500-kV Removal	1.9			48	200	47	184	10	14	449	50
9	Revised Proposed Route	165.3	16	96	51	6,815	37	7,877	22	383	115	1,644
	Proposed – Existing 138-kV Removal <sup>1/</sup>	25.7			30	2,381	34	2,519	14	146	69	423
	Segment 9 FEIS Proposed Route	162.2	16	96	62	5,481	46	6,234	26	324	146	1,391
	Route 9K	174.6	16	96	82	5,218	48	6,478	25	209	147	1,103
	Proposed – Comparison portion for Toana Road Variations 1/1-A	8.7			191	242	20	406	8	3	184	117
	Toana Road Variation 1	8.5			177	283	23	473	9	2	140	103
	Toana Road Variation 1-A	8.9			185	266	23	457	9	2	158	106
8/9	Comparison portion for the Alternative 5 WWE Corridor and Alternative 5 Helicopter-assisted Construction Variations	66.1 <sup>2/</sup>	8	3	71	1,625	27	2,327	13	120	102	189
	Alternative 5 WWE Corridor Variation	62.2 <sup>3/</sup>	8	3	65	1,628	28	2,211	13	121	107	198
	Alternative 5 Helicopter-assisted Construction Variation	66.1 <sup>2/</sup>	8	3	71	1,625	27	2,327	13	120	102	189
Segment Number	Revised Proposed Routes, Other Routes, and Route Variations	Segment Length in Miles	Post-Construction Conditions									
			Forest Woodlands		Shrublands		Grasslands		Riparian		Agriculture/Disturbed	
			Average Patch Size (Acre)	Patch Count	Average Patch Size (Acre)	Patch Count	Average Patch Size (Acre)	Patch Count	Average Patch Size (Acre)	Patch Count	Average Patch Size (Acre)	Patch Count
8	Revised Proposed Route	129.7			57	5,236	36	6,703	11	204	152	922
	Proposed - Existing 500-kV Removal <sup>1/</sup>	1.1			24	513	48	449			61	57
	Route 8G	146.9	13	1	69	4,523	55	5,164	25	213	205	765
	Route 8G – Existing 500-kV Removal	1.9			48	201	47	185	10	14	449	50
	Route 8H	137.5	13	1	39	6,072	41	6,496	22	388	142	1,286
	Route 8H – Existing 138-kV Removal	25.7			30	2,418	33	2,559	14	147	70	421
	Route 8H – Existing 500-kV Removal	1.9			48	201	47	185	10	14	449	50
9	Revised Proposed Route	165.3	16	96	49	7,031	36	8,083	22	385	114	1,651
	Proposed - Existing 138-kV Removal <sup>1/</sup>	25.7			30	2,407	34	2,541	14	147	69	423
	Segment 9 FEIS Proposed Route	162.2	16	96	60	5,733	44	6,486	26	327	144	1,408
	Route 9K	174.6	16	96	78	5,490	46	6,765	25	210	146	1,110
	Proposed - Comparison portion for Toana Road Variations 1/1-A	8.7			176	263	20	420	8	3	184	117
	Toana Road Variation 1	8.5			165	304	23	487	9	2	140	103
	Toana Road Variation 1-A	8.9			171	287	23	471	9	2	158	106
8/9	Comparison portion for the Alternative 5 WWE Corridor and Alternative 5 Helicopter-assisted Construction Variations	66.1 <sup>2/</sup>	8	3	67	1,699	27	2,399	13	122	102	189
	Alternative 5 WWE Corridor Variation	62.2 <sup>3/</sup>	8	3	62	1,702	27	2,283	13	123	107	198
	Alternative 5 Helicopter-assisted Construction Variation	66.1 <sup>2/</sup>	8	3	67	1,699	27	2,399	13	122	102	189

Notes: Acreages have been rounded to the nearest whole acre; therefore, numbers are inexact and columns/rows may not sum exactly

Blank cells indicate zero acres or null value

<sup>1/</sup> Portions of the disturbance areas may overlap; therefore, actual effects may be less than presented

<sup>2/</sup> This variation consists of approximately 32.9 miles of Route 8G and 33.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

<sup>3/</sup> This variation consists of approximately 31.0 miles of Route 8G and 31.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

Source: Gergely and McKerrow 2013, ESRI 2015

Table D.10-3b. Change in Fragmentation Levels as a Result of Roads Between Pre- and Post-Construction

Segment Number	Revised Proposed Routes, Other Routes, and Route Variations	Segment Length in Miles	Forest Woodlands		Shrublands		Grasslands		Riparian		Agriculture/Disturbed	
			Reduction in Average Patch Size (Acre)	Change in Patch Count	Reduction in Average Patch Size (Acre)	Change in Patch Count	Reduction in Average Patch Size (Acre)	Change in Patch Count	Reduction in Average Patch Size (Acre)	Change in Patch Count	Reduction in Average Patch Size (Acre)	Change in Patch Count
8	Revised Proposed Route	129.7			1	113	1	155	0.1	1	7	38
	Proposed - Existing 500-kV Removal <sup>1/</sup>	1.1					<1	1				
	Route 8G	146.9			4	231	3	270	0.1	1	6	23
	Route 8G – Existing 500-kV Removal	1.9			<1	1	<1	1				
	Route 8H	137.5			1	-189	1	-199	0.2	-3	2	-19
	Route 8H – Existing 138-kV Removal	25.7			<1	-37	1	-40	0.1	-1	<1	-2
	Route 8H – Existing 500-kV Removal	1.9			<1	-1	<1	-1	0.0		t <sup>2/</sup>	
9	Revised Proposed Route	165.3			2	216	1	206	0.1	2	<1	7
	Proposed - Existing 138-kV Removal <sup>1/</sup>	25.7			<1	26	<1	22	0.1	1		
	Segment 9 FEIS Proposed Route	162.2			3	-252	2	-252	0.2	-3	2	-17
	Route 9K	174.6			4	272	2	287	0.1	1	1	7
	Proposed - Comparison portion for Toana Road Variations 1/1-A	8.7			15	21	1	14				
	Toana Road Variation 1	8.5			12	21	1	14				
	Toana Road Variation 1-A	8.9			14	21	1	14				
8/9	Comparison portion for the Alternative 5 WWE Corridor and Alternative 5 Helicopter-assisted Construction Variations	66.1 <sup>3/</sup>			3	-74	1	-72	0.2	-2	t <sup>2/</sup>	
	Alternative 5 WWE Corridor Variation	62.2 <sup>4/</sup>			3	-74	1	-72	0.2	-2	t <sup>2/</sup>	
	Alternative 5 Helicopter-assisted Construction Variation	66.1 <sup>3/</sup>			3	-74	1	-72	0.2	-2	t <sup>2/</sup>	

Notes: Acreages have been rounded to the nearest whole acre; therefore, numbers are inexact and columns/rows may not sum exactly

Blank cells indicate zero acres or null value

<sup>1/</sup> Portions of the disturbance areas may overlap; therefore, actual effects may be less than presented

<sup>2/</sup> "t" indicates only a trace amount (<0.1 acre) of occupancy

<sup>3/</sup> This variation consists of approximately 32.9 miles of Route 8G and 33.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

<sup>4/</sup> This variation consists of approximately 31.0 miles of Route 8G and 31.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

Source: Gergely and McKerrow 2013, ESRI 2015



**Table D.10-3c.** Pre- and Post-Construction Levels of Fragmentation Resulting from Roads Associated with the Seven Action Alternatives

Alternative	Pre-Construction Conditions									
	Forest Woodlands		Shrublands		Grasslands		Riparian		Agriculture/Disturbed	
	Average Patch Size (Acre)	Patch Count	Average Patch Size (Acre)	Patch Count	Average Patch Size (Acre)	Patch Count	Average Patch Size (Acre)	Patch Count	Average Patch Size (Acre)	Patch Count
Alternative 1	16	96	54	11,440	38	13,570	20	516	132	2,419
Alternative 2	16	96	60	10,160	43	12,020	22	462	153	2,182
Alternative 3	16	96	70	9,926	44	12,310	20	352	154	1,897
Alternative 4	16	96	76	6,183	52	7,371	23	234	191	1,352
Alternative 5	16	96	70	7,080	52	8,138	25	363	186	1,646
Alternative 6	16	96	53	8,687	46	9,541	22	456	168	1,899
Alternative 7	16	96	61	9,135	46	10,480	22	447	158	1,904
Alternative	Post-Construction Conditions									
	Forest Woodlands		Shrublands		Grasslands		Riparian		Agriculture/Disturbed	
	Average Patch Size (Acre)	Patch Count	Average Patch Size (Acre)	Patch Count	Average Patch Size (Acre)	Patch Count	Average Patch Size (Acre)	Patch Count	Average Patch Size (Acre)	Patch Count
Alternative 1	16	96	52	11,826	37	13,991	20	520	129	2,474
Alternative 2	16	96	58	10,607	41	12,511	22	466	149	2,237
Alternative 3	16	96	67	10,367	42	12,796	20	354	151	1,944
Alternative 4	16	96	72	6,552	49	7,757	23	235	187	1,378
Alternative 5	16	96	66	7,503	49	8,592	25	366	182	1,680
Alternative 6	16	96	51	9,079	44	9,950	22	459	165	1,933
Alternative 7	16	96	59	9,562	44	10,934	22	450	155	1,938

Notes: Acreages have been rounded to the nearest whole acre; therefore, numbers are inexact and columns/rows may not sum exactly

**Table D.10-3d.** Change in Fragmentation Levels as a Result of Roads Between Pre- and Post-Construction Associated with the Seven Action Alternatives

Alternative	Forest Woodlands		Shrublands		Grasslands		Riparian		Agriculture/Disturbed	
	Reduction in Average Patch Size (Acre)	Change in Patch Count	Reduction in Average Patch Size (Acre)	Change in Patch Count	Reduction in Average Patch Size (Acre)	Change in Patch Count	Reduction in Average Patch Size (Acre)	Change in Patch Count	Reduction in Average Patch Size (Acre)	Change in Patch Count
Alternative 1			2	-386	1	-421	<1	-4	3	-55
Alternative 2			3	-447	2	-491	<1	-4	4	-55
Alternative 3			3	-441	2	-486	<1	-2	4	-47
Alternative 4			4	-369	3	-386	<1	-1	4	-26
Alternative 5			4	-423	3	-454	<1	-3	4	-34
Alternative 6			2	-392	2	-409	<1	-3	3	-34
Alternative 7			3	-427	2	-454	<1	-3	3	-34

Notes: Acreages have been rounded to the nearest whole acre; therefore, numbers are inexact and columns/rows may not sum exactly  
Blank cells indicate zero acres or null value

Table D.10-4a. Pre- and Post-Construction Levels of Fragmentation Resulting from Transmission Lines

Segment Number	Revised Proposed Routes, Other Routes, and Route Variations	Segment Length in Miles	Pre-Construction Conditions									
			Forest Woodlands		Shrublands		Grasslands		Riparian		Agriculture/Disturbed	
			Average Patch Size (Acre)	Patch Count	Average Patch Size (Acre)	Patch Count	Average Patch Size (Acre)	Patch Count	Average Patch Size (Acre)	Patch Count	Average Patch Size (Acre)	Patch Count
8	Revised Proposed Route	129.7			98	3,042	57	4,249	14	172	655	214
	Proposed - Existing 500-kV Removal <sup>1/</sup>	1.1			59	214	216	100			696	5
	Route 8G	146.9	13	1	93	3,371	75	3,749	29	179	895	175
	Route 8G – Existing 500-kV Removal	1.9			44	220	41	210	9	15	478	47
	Route 8H	137.5	13	1	69	3,413	77	3,429	32	268	836	219
	Route 8H – Existing 138-kV Removal	25.7			64	1,128	76	1,118	21	98	564	52
	Route 8H – Existing 500-kV Removal	1.9			44	220	41	210	9	15	478	47
9	Revised Proposed Route	165.3	17	90	108	3,196	74	3,965	33	260	1,236	153
	Proposed - Existing 138-kV Removal <sup>1/</sup>	25.7			64	1,128	76	1,118	21	98	564	52
	Segment 9 FEIS Proposed Route	162.2	17	90	111	3,077	79	3,601	38	225	1,443	141
	Route 9K	174.6	17	90	136	3,142	72	4,292	31	169	1,501	108
	Proposed - Comparison portion for Toana Road Variations 1/1-A	8.7			1,078	43	31	262	8	3	3,080	7
	Toana Road Variation 1	8.5			894	56	37	299	9	2	2,066	7
	Toana Road Variation 1-A	8.9			965	51	37	291	9	2	2,395	7
8/9	Comparison portion for the Alternative 5 WWE Corridor and Alternative 5 Helicopter-assisted Construction Variations	66.1 <sup>2/</sup>	8	3	165	694	48	1,329	19	82	712	27
	Alternative 5 WWE Corridor Variation	62.2 <sup>3/</sup>	8	3	150	702	51	1,223	19	83	785	27
	Alternative 5 Helicopter-assisted Construction Variation	66.1 <sup>2/</sup>	8	3	165	694	48	1,329	19	82	712	27
Segment Number	Revised Proposed Routes, Other Routes, and Route Variations	Segment Length in Miles	Post-Construction Conditions									
			Forest Woodlands		Shrublands		Grasslands		Riparian		Agriculture/Disturbed	
			Average Patch Size (Acre)	Patch Count	Average Patch Size (Acre)	Patch Count	Average Patch Size (Acre)	Patch Count	Average Patch Size (Acre)	Patch Count	Average Patch Size (Acre)	Patch Count
8	Revised Proposed Route	129.7			91	3,273	53	4,510	13	178	558	251
	Proposed - Existing 500-kV Removal <sup>1/</sup>	1.1			55	227	186	116			696	5
	Route 8G	146.9	13	1	81	3,859	67	4,243	27	192	735	213
	Route 8G – Existing 500-kV Removal	1.9			40	238	38	226	9	16	408	55
	Route 8H	137.5	13	1	62	3,776	70	3,783	30	283	724	253
	Route 8H – Existing 138-kV Removal	25.7			57	1,255	68	1,248	21	102	466	63
	Route 8H – Existing 500-kV Removal	1.9			40	238	38	224	9	16	416	54
9	Revised Proposed Route	165.3	17	91	96	3,592	68	4,335	31	269	1,056	179
	Proposed – Existing 138-kV Removal <sup>1/</sup>	25.7			58	1,240	70	1,226	21	101	489	60
	Segment 9 FEIS Proposed Route	162.2	17	91	100	3,413	72	3,938	35	240	1,176	173
	Route 9K	174.6	17	91	117	3,641	65	4,786	29	181	1,228	132
	Proposed - Comparison portion for Toana Road Variations 1/1-A	8.7			813	57	29	282	8	3	2,695	8
	Toana Road Variation 1	8.5			716	70	35	319	9	2	1,808	8
	Toana Road Variation 1-A	8.9			757	65	34	311	9	2	2,096	8
8/9	Comparison portion for the Alternative 5 WWE Corridor and Alternative 5 Helicopter-assisted Construction Variations	66.1 <sup>2/</sup>	8	3	128	898	42	1,520	17	96	480	40
	Alternative 5 WWE Corridor Variation	62.2 <sup>3/</sup>	8	3	116	906	44	1,414	16	97	530	40
	Alternative 5 Helicopter-assisted Construction Variation	66.1 <sup>2/</sup>	8	3	128	898	42	1,520	17	96	480	40

Notes: Acreages have been rounded to the nearest whole acre; therefore, numbers are inexact and columns/rows may not sum exactly

Blank cells indicate zero acres or null value

<sup>1/</sup> Portions of the disturbance areas may overlap; therefore, actual effects may be less than presented

<sup>2/</sup> This variation consists of approximately 32.9 miles of Route 8G and 33.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

<sup>3/</sup> This variation consists of approximately 31.0 miles of Route 8G and 31.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

Source: Gergely and McKerrow 2013, Ventx 2016

**Table D.10-4b.** Change in Fragmentation Levels as a Result of Transmission Lines Between Pre- and Post-Construction

Segment Number	Revised Proposed Routes, Other Routes, and Route Variations	Segment Length in Miles	Forest Woodlands		Shrublands		Grasslands		Riparian		Agriculture/Disturbed	
			Reduction in Average Patch Size (Acre)	Change in Patch Count	Reduction in Average Patch Size (Acre)	Change in Patch Count	Reduction in Average Patch Size (Acre)	Change in Patch Count	Reduction in Average Patch Size (Acre)	Change in Patch Count	Reduction in Average Patch Size (Acre)	Change in Patch Count
8	Revised Proposed Route	129.7			7	231	3	261	0.5	6	97	37
	Proposed - Existing 500-kV Removal <sup>1/</sup>	1.1			3	13	30	16				
	Route 8G	146.9			12	488	9	494	2.0	13	160	38
	Route 8G – Existing 500-kV Removal	1.9			3	18	3	16	0.6	1	70	8
	Route 8H	137.5			7	-363	7	-354	1.7	-15	112	-34
	Route 8H – Existing 138-kV Removal	25.7			6	-127	8	-130	0.8	-4	99	-11
	Route 8H – Existing 500-kV Removal	1.9			3	-18	3	-14	0.6	-1	62	-7
9	Revised Proposed Route	165.3	<1	1	12	396	6	370	1.1	9	179	26
	Proposed - Existing 138-kV Removal <sup>1/</sup>	25.7			6	112	7	108	0.6	3	75	8
	Segment 9 FEIS Proposed Route	162.2	<1	-1	11	-336	7	-337	2.4	-15	267	-32
	Route 9K	174.6	<1	1	19	499	7	494	2.0	12	273	24
	Comparison portion for Toana Road Variations 1/1-A	8.7			265	14	2	20			385	1
	Toana Road Variation 1	8.5			179	14	2	20			258	1
	Toana Road Variation 1-A	8.9			208	14	2	20			299	1
8/9	Comparison portion for the Alternative 5 WWE Corridor and Alternative 5 Helicopter-assisted Construction Variations	66.1 <sup>2/</sup>			38	-204	6	-191	2.8	-14	231	-13
	Alternative 5 WWE Corridor Variation	62.2 <sup>3/</sup>			34	-204	7	-191	2.7	-14	255	-13
	Alternative 5 Helicopter-assisted Construction Variation	66.1 <sup>2/</sup>			38	-204	6	-191	2.8	-14	231	-13

Notes: Acreages have been rounded to the nearest whole acre; therefore, numbers are inexact and columns/rows may not sum exactly

Blank cells indicate zero acres or null value

<sup>1/</sup> Portions of the disturbance areas may overlap; therefore, actual effects may be less than presented

<sup>2/</sup> This variation consists of approximately 32.9 miles of Route 8G and 33.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

<sup>3/</sup> This variation consists of approximately 31.0 miles of Route 8G and 31.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

Source: Gergely and McKerrow 2013, Ventx 2016

**Table D.10-4c.** Pre- and Post-Construction Levels of Fragmentation Resulting from Transmission Lines Associated with the Seven Action Alternatives

Alternative	Pre-Construction Conditions									
	Forest Woodlands		Shrublands		Grasslands		Riparian		Agriculture/Disturbed	
	Average Patch Size (Acre)	Patch Count	Average Patch Size (Acre)	Patch Count	Average Patch Size (Acre)	Patch Count	Average Patch Size (Acre)	Patch Count	Average Patch Size (Acre)	Patch Count
Alternative 1	17	90	101	6,054	67	7,732	27	378	908	351
Alternative 2	17	90	103	5,962	69	7,427	29	347	982	340
Alternative 3	17	90	116	6,039	66	8,146	24	294	947	309
Alternative 4	17	90	116	4,071	75	5,086	28	195	1,194	216
Alternative 5	17	90	107	4,637	78	5,399	34	265	1,211	253
Alternative 6	17	90	93	4,986	80	5,485	31	326	1,165	274
Alternative 7	17	90	103	5,437	76	6,429	31	323	1,078	279
Alternative	Post-Construction Conditions									
	Forest Woodlands		Shrublands		Grasslands		Riparian		Agriculture/Disturbed	
	Average Patch Size (Acre)	Patch Count	Average Patch Size (Acre)	Patch Count	Average Patch Size (Acre)	Patch Count	Average Patch Size (Acre)	Patch Count	Average Patch Size (Acre)	Patch Count
Alternative 1	17	91	92	6,687	62	8,389	26	395	759	420
Alternative 2	17	91	92	6,645	63	8,141	28	369	805	415
Alternative 3	17	91	103	6,784	60	8,923	22	312	781	375
Alternative 4	17	91	100	4,690	67	5,714	26	212	955	270
Alternative 5	17	91	93	5,321	69	6,104	32	288	970	316
Alternative 6	17	91	82	5,639	72	6,143	29	347	936	341
Alternative 7	17	91	90	6,208	67	7,212	29	346	870	346

Notes: Acreages have been rounded to the nearest whole acre; therefore, numbers are inexact and columns/rows may not sum exactly

**Table D.10-4d.** Change in Fragmentation Levels as a Result of Transmission Lines Between Pre- and Post-Construction Associated with the Seven Action Alternatives

Alternative	Forest Woodlands		Shrublands		Grasslands		Riparian		Agriculture/Disturbed	
	Reduction in Average Patch Size (Acre)	Change in Patch Count	Reduction in Average Patch Size (Acre)	Change in Patch Count	Reduction in Average Patch Size (Acre)	Change in Patch Count	Reduction in Average Patch Size (Acre)	Change in Patch Count	Reduction in Average Patch Size (Acre)	Change in Patch Count
Alternative 1	<1	-1	10	-633	5	-657	1.2	-17	149	-69
Alternative 2	<1	-1	11	-683	6	-714	1.8	-22	177	-75
Alternative 3	<1	-1	13	-745	6	-777	1.4	-18	167	-66
Alternative 4	<1	-1	15	-619	8	-628	2.2	-17	239	-54
Alternative 5	<1	-1	14	-684	9	-705	2.7	-23	242	-63
Alternative 6	<1	-1	11	-653	9	-658	1.9	-21	229	-67
Alternative 7	<1	-1	13	-771	8	-783	2.1	-23	209	-67

Notes: Acreages have been rounded to the nearest whole acre; therefore, numbers are inexact and columns/rows may not sum exactly

Table D.10-5a. Pre- and Post-Construction Levels of Fragmentation Resulting from Roads and Transmission Lines

Segment Number	Revised Proposed Routes, Other Routes, and Route Variations	Segment Length in Miles	Pre-Construction Conditions									
			Forest Woodlands		Shrublands		Grasslands		Riparian		Agriculture/Disturbed	
			Average Patch Size (Acre)	Patch Count	Average Patch Size (Acre)	Patch Count	Average Patch Size (Acre)	Patch Count	Average Patch Size (Acre)	Patch Count	Average Patch Size (Acre)	Patch Count
8	Revised Proposed Route	129.7			49	6,089	32	7,541	11	213	130	1,075
	Proposed - Existing 500-kV Removal <sup>1/</sup>	1.1			24	524	46	470			61	57
	Route 8G	146.9	13	1	69	4,579	54	5,232	24	218	178	879
	Route 8G – Existing 500-kV Removal	1.9			37	256	37	232	9	16	271	83
	Route 8H	137.5	13	1	37	6,338	39	6,811	21	396	128	1,435
	Route 8H – Existing 138-kV Removal	25.7			28	2,552	32	2,694	14	151	65	450
	Route 8H – Existing 500-kV Removal	1.9			37	256	37	232	9	16	271	83
9	Revised Proposed Route	165.3	16	97	49	7,121	36	8,189	22	392	110	1,717
	Proposed - Existing 138-kV Removal <sup>1/</sup>	25.7			28	2,552	32	2,694	14	151	65	454
	Segment 9 FEIS Proposed Route	162.2	16	97	61	5,631	44	6,395	26	330	141	1,445
	Route 9K	174.6	16	97	80	5,350	47	6,608	24	213	142	1,145
	Proposed - Comparison portion for Toana Road Variations 1/1-A	8.7			191	242	20	406	8	3	184	117
	Toana Road Variation 1	8.5			177	283	23	473	9	2	140	103
	Toana Road Variation 1-A	8.9			185	266	23	457	9	2	158	106
8/9	Comparison portion for the Alternative 5 WWE Corridor and Alternative 5 Helicopter-assisted Construction Variations	66.1 <sup>2/</sup>	8	3	69	1,650	27	2,357	13	122	97	198
	Alternative 5 WWE Corridor Variation	62.2 <sup>3/</sup>	8	3	64	1,653	28	2,241	13	123	102	207
	Alternative 5 Helicopter-assisted Construction Variation	66.1 <sup>2/</sup>	8	3	69	1,650	27	2,357	13	122	97	198
Segment Number	Revised Proposed Routes, Other Routes, and Route Variations	Segment Length in Miles	Post-Construction Conditions									
			Forest Woodlands		Shrublands		Grasslands		Riparian		Agriculture/Disturbed	
			Average Patch Size (Acre)	Patch Count	Average Patch Size (Acre)	Patch Count	Average Patch Size (Acre)	Patch Count	Average Patch Size (Acre)	Patch Count	Average Patch Size (Acre)	Patch Count
8	Revised Proposed Route	129.7			46	6,481	30	7,944	11	221	120	1,163
	Proposed - Existing 500-kV Removal <sup>1/</sup>	1.1			23	536	43	502			61	57
	Route 8G	146.9	13	1	56	5,654	46	6,133	23	232	162	966
	Route 8G – Existing 500-kV Removal	1.9			34	282	34	250	8	17	231	97
	Route 8H	137.5	13	1	34	6,931	36	7,444	20	416	121	1,513
	Route 8H – Existing 138-kV Removal	25.7			26	2,715	30	2,886	13	156	63	467
	Route 8H – Existing 500-kV Removal	1.9			34	282	35	248	8	17	244	92
9	Revised Proposed Route	165.3	16	98	44	7,927	33	8,829	21	403	107	1,769
	Proposed - Existing 138-kV Removal <sup>1/</sup>	25.7			27	2,699	30	2,853	13	155	63	467
	Segment 9 FEIS Proposed Route	162.2	16	98	55	6,241	40	7,017	24	350	135	1,512
	Route 9K	174.6	16	98	65	6,507	41	7,512	23	226	136	1,192
	Proposed - Comparison portion for Toana Road Variations 1/1-A	8.7			143	324	19	438	8	3	181	119
	Toana Road Variation 1	8.5			137	365	22	505	9	2	138	105
	Toana Road Variation 1-A	8.9			141	348	22	489	9	2	155	108
8/9	Comparison portion for the Alternative 5 WWE Corridor and Alternative 5 Helicopter-assisted Construction Variations	66.1 <sup>2/</sup>	8	3	53	2,176	24	2,685	11	139	86	224
	Alternative 5 WWE Corridor Variation	62.2 <sup>3/</sup>	8	3	48	2,179	24	2,569	11	140	91	233
	Alternative 5 Helicopter-assisted Construction Variation	66.1 <sup>2/</sup>	8	3	53	2,176	24	2,685	11	139	86	224

Notes: Acreages have been rounded to the nearest whole acre; therefore, numbers are inexact and columns/rows may not sum exactly

Blank cells indicate zero acres or null value

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<sup>2/</sup> This variation consists of approximately 32.9 miles of Route 8G and 33.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

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Source: Gergely and McKerrow 2013, ESRI 2015, Ventyx 2014



**Table D.10-5b.** Change in Fragmentation Levels as a Result of Roads and Transmission Lines Between Pre- and Post-Construction

Segment Number	Revised Proposed Routes, Other Routes, and Route Variations	Segment Length in Miles	Forest Woodlands		Shrublands		Grasslands		Riparian		Agriculture/Disturbed	
			Reduction in Average Patch Size (Acre)	Change in Patch Count	Reduction in Average Patch Size (Acre)	Change in Patch Count	Reduction in Average Patch Size (Acre)	Change in Patch Count	Reduction in Average Patch Size (Acre)	Change in Patch Count	Reduction in Average Patch Size (Acre)	Change in Patch Count
8	Revised Proposed Route	129.7			3	392	2	403	0.4	8	10	88
	Proposed - Existing 500-kV Removal <sup>1/</sup>	1.1			1	12	3	32				
	Route 8G	146.9			13	1,075	8	901	1.5	14	16	87
	Route 8G – Existing 500-kV Removal	1.9			3	26	3	18	0.5	1	39	14
	Route 8H	137.5			3	593	3	633	1.0	20	7	78
	Route 8H – Existing 138-kV Removal	25.7			2	163	2	192	0.4	5	2	17
	Route 8H – Existing 500-kV Removal	1.9			3	26	2	16	0.5	1	26	9
9	Revised Proposed Route	165.3	<1	1	5	806	3	640	0.6	11	3	52
	Proposed - Existing 138-kV Removal <sup>1/</sup>	25.7			2	147	2	159	0.4	4	2	13
	Segment 9 FEIS Proposed Route	162.2	<1	1	6	610	4	622	1.5	20	6	67
	Route 9K	174.6	<1	1	14	1,157	6	904	1.4	13	6	47
	Proposed - Comparison portion for Toana Road Variations 1/1-A	8.7			48	82	1	32			3	2
	Toana Road Variation 1	8.5			40	82	1	32			3	2
	Toana Road Variation 1-A	8.9			44	82	2	32			3	2
8/9	Comparison portion for the Alternative 5 WWE Corridor and Alternative 5 Helicopter-assisted Construction Variations	66.1 <sup>2/</sup>			17	-526	3	-328	1.6	-17	11	-26
	Alternative 5 WWE Corridor Variation	62.2 <sup>3/</sup>			15	-526	4	-328	1.6	-17	11	-26
	Alternative 5 Helicopter-assisted Construction Variation	66.1 <sup>2/</sup>			17	-526	3	-328	1.6	-17	11	-26

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Source: Gergely and McKerrow 2013, ESRI 2015, Ventyx 2014

**Table D.10-5c.** Pre- and Post-Construction Levels of Fragmentation Resulting from Roads and Transmission Lines Associated with the Seven Action Alternatives

Alternative	Pre-Construction Conditions									
	Forest Woodlands		Shrublands		Grasslands		Riparian		Agriculture/Disturbed	
	Average Patch Size (Acre)	Patch Count	Average Patch Size (Acre)	Patch Count	Average Patch Size (Acre)	Patch Count	Average Patch Size (Acre)	Patch Count	Average Patch Size (Acre)	Patch Count
Alternative 1	16	97	48	12,686	35	14,844	19	534	119	2,675
Alternative 2	16	97	54	11,250	39	13,143	21	477	138	2,419
Alternative 3	16	97	63	10,998	40	13,403	19	365	138	2,122
Alternative 4	16	97	72	6,546	49	7,773	23	241	170	1,518
Alternative 5	16	97	66	7,461	49	8,570	24	372	168	1,824
Alternative 6	16	97	50	9,223	43	10,124	22	468	152	2,096
Alternative 7	16	97	58	9,672	44	11,063	22	459	143	2,101
Alternative	Post-Construction Conditions									
	Forest Woodlands		Shrublands		Grasslands		Riparian		Agriculture/Disturbed	
	Average Patch Size (Acre)	Patch Count	Average Patch Size (Acre)	Patch Count	Average Patch Size (Acre)	Patch Count	Average Patch Size (Acre)	Patch Count	Average Patch Size (Acre)	Patch Count
Alternative 1	16	98	44	13,876	33	15,965	18	557	113	2,831
Alternative 2	16	98	49	12,591	36	14,407	20	505	129	2,580
Alternative 3	16	98	56	12,562	37	14,787	18	388	129	2,261
Alternative 4	16	98	59	7,925	43	8,923	21	262	158	1,628
Alternative 5	16	98	55	8,932	43	9,863	23	400	157	1,956
Alternative 6	16	98	44	10,512	39	11,287	20	494	143	2,236
Alternative 7	16	98	50	11,254	39	12,460	21	487	134	2,240

Notes: Acreages have been rounded to the nearest whole acre; therefore, numbers are inexact and columns/rows may not sum exactly

**Table D.10-5d.** Change in Fragmentation Levels as a Result of Roads and Transmission Lines Between Pre- and Post-Construction Associated with the Seven Action Alternatives

Alternative	Forest Woodlands		Shrublands		Grasslands		Riparian		Agriculture/Disturbed	
	Reduction in Average Patch Size (Acre)	Change in Patch Count	Reduction in Average Patch Size (Acre)	Change in Patch Count	Reduction in Average Patch Size (Acre)	Change in Patch Count	Reduction in Average Patch Size (Acre)	Change in Patch Count	Reduction in Average Patch Size (Acre)	Change in Patch Count
Alternative 1	<1	-1	4	-1,190	2	-1,121	0.8	-23	7	-156
Alternative 2	<1	-1	6	-1,341	3	-1,264	1.2	-28	9	-161
Alternative 3	<1	-1	8	-1,564	3	-1,384	1.1	-23	8	-139
Alternative 4	<1	-1	13	-1,379	6	-1,150	1.8	-21	11	-110
Alternative 5	<1	-1	11	-1,471	6	-1,293	1.7	-28	11	-132
Alternative 6	<1	-1	6	-1,289	4	-1,163	1.1	-26	10	-140
Alternative 7	<1	-1	8	-1,582	5	-1,397	1.3	-28	9	-139

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Table D.10-6. Acres of Construction Impacts to Big Game Habitat Impacted by the Gateway West Transmission Line

Segment Number	Revised Proposed Routes, Other Routes, and Route Variations	Segment Length in Miles	Acres of Wildlife Habitat Impacted					
			Bighorn Sheep Habitat	Elk Calving Areas	Elk Winter Range	Moose Winter Range	Mule Deer Winter Range	Pronghorn Winter Range
8	Revised Proposed Route	129.7			326		791	120
	Proposed – Existing 500-kV Removal <sup>1/</sup>	1.1						
	Route 8G	146.9	<1				241	492 [9]
	Route 8G – Existing 500-kV Removal	1.9						
	Route 8H	137.5	23 [23]				240	151 [20]
	Route 8H – Existing 138-kV Removal	25.7						
	Route 8H – Existing 500-kV Removal	1.9						
9	Revised Proposed Route	165.3	25 [23]				176	141 [20]
	Proposed - Existing 138-kV Removal <sup>1/</sup>	25.7						
	Segment 9 FEIS Proposed Route	162.2	<1				205	398 [64]
	Route 9K	174.6	2				176	479 [8]
	Proposed - Comparison portion for Toana Road Variations 1/1-A	8.7						
	Toana Road Variation 1	8.5						
	Toana Road Variation 1-A	8.9						
8/9	Comparison portion for the Alternative 5 WWE Corridor and Alternative 5 Helicopter-assisted Construction Variations	66.1 <sup>2/</sup>	1					783 [9]
	Alternative 5 WWE Corridor Variation	62.2 <sup>3/</sup>	1					658 [103]
	Alternative 5 Helicopter-assisted Construction Variation	66.1 <sup>2/</sup>	1					698 [9]

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Blank cells indicate zero acres or null value

The numbers in square brackets "[ ]" correspond to impacts that would occur on BLM-managed lands within the SRBOP

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Source: Tetra Tech 2009b

Table D.10-7. Acres of Construction Impacts that Would Occur within a 1-mile buffer around Raptors and Birds of Prey Nests

Segment Number	Revised Proposed Routes, Other Routes, and Route Variations	Segment Length in Miles	Acres of Raptor and Birds of Prey Habitat Impacts														
			American Kestrel	Bald Eagle	Burrowing Owl	Common Raven	Ferruginous Hawk	Golden Eagle	Great Horned Owl	Long-eared Owl	Northern Goshawk	Northern Harrier	Osprey	Prairie Falcon	Red-tailed Hawk	Short-eared Owl	Swainsons Hawk
8	Revised Proposed Route	129.7		40	440 [219]		839 [219]	306 [24]						66 [12]		32	39
	Proposed – Existing 500-kV Removal <sup>1/</sup>	1.1			9 [3]		9 [3]										
	Route 8G	146.9		32	141 [8]	7	302 [114]	610				87		129			
	Route 8G – Existing 500-kV Removal	1.9															
	Route 8H	137.5		20	561 [372]	87 [87]	474 [396]	398 [3]				20		565 [314]			
	Route 8H – Existing 138-kV Removal	25.7			28 [24]	4 [4]	39 [32]							13 [11]			
	Route 8H – Existing 500-kV Removal	1.9															
9	Revised Proposed Route	165.3		24	620 [373]	87 [87]	756 [389]	357 [3]				24		574 [315]		1	78
	Proposed – Existing 138-kV Removal <sup>1/</sup>	25.7			28 [24]	4 [4]	39 [32]							13 [11]			
	Segment 9 FEIS Proposed Route	162.2		33	348 [62]	58	680 [149]	457 [13]				26		215 [6]	36		90
	Route 9K	174.6		33	185 [8]	7	582 [112]	575				87		130		1	78
	Proposed - Comparison portion for Toana Road Variations 1/1-A	8.7			36		66	14									54
	Toana Road Variation 1	8.5			21		22										10
	Toana Road Variation 1-A	8.9			23		22										10
8/9	Comparison portion for the Alternative 5 WWE Corridor and Alternative 5 Helicopter-assisted Construction Variations	66.1 <sup>2/</sup>		55	116 [5]		65	344				104		98	43		
	Alternative 5 WWE Corridor Variation	62.2 <sup>3/</sup>		55	273 [89]		138 [30]	298 [17]				31		157 [4]	44		
	Alternative 5 Helicopter-assisted Construction Variation	66.1 <sup>2/</sup>		55	114 [5]		32	356				121		64	67		

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Source: IDFG 2014; Tetra Tech 2016

**Table D.10-8.** Acres of Operations Impacts to Big Game Habitat Impacted by the Gateway West Transmission Line

Segment Number	Revised Proposed Routes, Other Routes, and Route Variations	Segment Length in Miles	Acres of Wildlife Habitat Impacted					
			Bighorn Sheep Habitat	Elk Calving Areas	Elk Winter Range	Moose Winter Range	Mule Deer Winter Range	Pronghorn Winter Range
8	Revised Proposed Route	129.7			35		94	14
	Route 8G	146.9	t <sup>2/</sup>				39	61 [3]
	Route 8H	137.5	2 [2]				39	20 [2]
9	Revised Proposed Route	165.3	2 [2]				16	20 [2]
	Segment 9 FEIS Proposed Route	162.2					17	43 [5]
	Route 9K	174.6	<1				17	61 [2]
	Proposed – Comparison portion for Toana Road Variations 1/1-A	8.7						
	Toana Road Variation 1	8.5						
	Toana Road Variation 1-A	8.9						
8/9	Comparison portion for the Alternative 5 WWE Corridor and Alternative 5 Helicopter-assisted Construction Variations	66.1 <sup>3/</sup>	<1					66 [3]
	Alternative 5 WWE Corridor Variation	62.2 <sup>4/</sup>	<1					48 [9]
	Alternative 5 Helicopter-assisted Construction Variation	66.1 <sup>3/</sup>	<1					42 [3]

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<sup>1/</sup> Portions of the disturbance areas may overlap; therefore, actual effects may be less than presented

<sup>2/</sup> "t" indicates only a trace amount (<0.1 acre) of impact

<sup>3/</sup> This variation consists of approximately 32.9 miles of Route 8G and 33.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

<sup>4/</sup> This variation consists of approximately 31.0 miles of Route 8G and 31.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

Source: Tetra Tech 2009b, 2016

Table D.10-9. Acres of Operations Impacts that Would Occur within a 1-mile Buffer around Raptors and Birds of Prey Nests

Segment Number	Revised Proposed Routes, Other Routes, and Route Variations	Segment Length in Miles	Acres of Raptor and Birds of Prey Habitat Impacts														
			American Kestrel	Bald Eagle	Burrowing Owl	Common Raven	Ferruginous Hawk	Golden Eagle	Great Horned Owl	Long-eared Owl	Northern Goshawk	Northern Harrier	Osprey	Prairie Falcon	Red-tailed Hawk	Short-eared Owl	Swainsons Hawk
8	Revised Proposed Route	129.7		4	35 [19]		90 [20]	39 [3]						5 [1]		2	4
	Route 8G	146.9		4	20 [2]	2	46 [19]	82				9		19			
	Route 8H	137.5		3	48 [26]	5 [5]	42 [34]	60 [1]				4		59 [27]			
9	Revised Proposed Route	165.3		4	52 [26]	5 [5]	68 [33]	47 [1]				4		60 [27]		<1	8
	Segment 9 FEIS Proposed Route	162.2		4	34 [5]	7	73 [17]	54 [1]				5		27 [2]	3		8
	Route 9K	174.6		4	24 [2]	2	72 [19]	69				8		20		<1	8
	Proposed – Comparison portion for Toana Road Variations 1/1-A	8.7			1		6	1									5
	Toana Road Variation 1	8.5			<1		3										2
	Toana Road Variation 1-A	8.9			1		3										2
8/9	Comparison portion for the Alternative 5 WWE Corridor and Alternative 5 Helicopter-assisted Construction Variations	66.1 <sup>3/</sup>		4	13 [1]		4	31				8		9	6		
	Alternative 5 WWE Corridor Variation	62.2 <sup>4/</sup>		3	21 [7]		7 [1]	26 [1]				4		17 [1]	6		
	Alternative 5 Helicopter-assisted Construction Variation	66.1 <sup>3/</sup>		3	13 [1]		2	22				5		8	5		

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<sup>1/</sup> Portions of the disturbance areas may overlap; therefore, actual effects may be less than presented

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Source: IDFG 2014; Tetra Tech 2016



**Table D.11-1.** ESA Threatened, Endangered, or Candidate Wildlife Species with the Potential to Occur within the Analysis Area for Segments 8 and 9

Common Name	Scientific Name	ESA Status	Federal Agency Status	Habitat Description	Does the Species Have Distribution or Potential Habitat within the Analysis Area?	Habitat Unit used for Analysis	Segments Species may be Present In
<b>Birds</b>							
Greater Sage-Grouse	<i>Centrocercus urophasianus</i>	Candidate	BLM sensitive	Habitat occurs within basin-prairie shrub and mountain-foothill shrub communities. Greater sage grouse are only found in areas where adequate sagebrush is available to meet habitat and biological needs. As a sagebrush obligate species, greater sage grouse rely upon the plant species to meet most of its habitat needs during all aspects of its annual life cycles. Adequate stands of sagebrush are essential as greater sage grouse rely on the leaves for food and plant structure for cover.	Yes – Habitat occurs throughout the Analysis Area. Leks have been documented within the Analysis Area.	Shrubland	8 and 9
Yellow-billed Cuckoo	<i>Coccyzus americanus</i>	Threatened	BLM sensitive	Yellow-billed Cuckoos are riparian obligate species that prefer extensive areas of dense thickets and mature deciduous forests near water, and requires low, dense, shrubby vegetation for nest sites. In Wyoming, the only areas that currently support the large cottonwood-riparian stands that are required by this species occur in isolated stands along the Bighorn, Powder, and North Platte rivers (WGFD n.d.). The Yellow-billed Cuckoo is considered an uncommon summer resident in Wyoming. In southwestern Idaho, the species is typically considered a ‘rare summer visitor.’ There have been confirmed sightings within Owyhee, Canyon, Elmore, Ada, Blaine, and Twin Falls counties within the last 25 years (Taylor 2000). The most suitable habitat in Idaho for the species occurs along the Snake River corridor (Taylor 2000).	Yes – The Project would cross through riparian habitats that could support this species.	Riparian cottonwood forest of greater than 5 ha (Reynolds and Hinckley 2005) with a percent overstory canopy of greater than 50 percent.	9
<b>Amphibians</b>							
Columbia Spotted Frog – Great Basin Population only	<i>Rana luteiventris</i>	Candidate	BLM sensitive	This species is aquatic and lives in or near permanent bodies of water such as: lakes, ponds, slow streams, and marshes. They prefer areas with thick algae and vegetation for cover, but may also hide under decaying vegetation. They most commonly occur in non-woody wetland plant communities.	Yes – Permanent water bodies occur in most segments within the Analysis Area.	Permanent wetland and open water areas below 9720 feet in elevation; delineated from vegetation mapping.	8 and 9
<b>Invertebrates</b>							
Bliss Rapids Snail	<i>Taylorconcha serpenticola</i>	Threatened	-	The Bliss Rapids snail resides on the sides and undersides of rocks in free-flowing and cold-water springs in the middle Snake River, Idaho. It prefers relatively clean and rocky substrates so that it can graze on algae and diatoms at night.	Yes – Project intersects middle Snake River	Snake River	8
Banbury Springs Limpet	<i>Lanx sp.</i>	Endangered	-	The Banbury limpet requires cold, clear and well-oxygenated water with swift currents. The Banbury limpet are found on smooth basalt, boulders, or cobble-sized grounds ranging from 2 to 20 inches deep, but they avoid areas with green algae. Currently, this species only exists at four cold-spring locations that are isolated from each other: Thousand Springs, Box Canyon Springs, Briggs Springs, and Banbury Springs.	Yes – Project intersects Snake River near Thousand Springs. Does not intersect Box Canyon Springs.	Snake River	8
Snake River Physa Snail	<i>Physa natricina</i>	Endangered	-	The Snake River physa snail is found in the middle Snake River of southern Idaho. It is believed to be confined to the Snake River, inhabiting areas of swift current on the undersides of large cobbles and boulder-sized rocks. Individuals have been found in relatively undisturbed areas with gravel, boulder, or cobble substrates and a low percentage of epiphytic algae or macrophytes.	Yes – Project intersects middle Snake River	Snake River	8
Bruneau Hot Springsnail	<i>Pyrgulopsis bruneauensis</i>	Endangered	-	The Bruneau hot springsnail occurs in thermal springs along an approximately 5 mile reach of the Bruneau River and in Hot Creek. The Bruneau hot springsnail inhabits small, geothermal spring runs and seeps, typically on basalt bedrock. Temperatures in these waters range from 15.7 to 36.9 degrees Celsius. Substrates usually comprise gravel and silt but individuals are also found on sand, mud, and algal film. Macrophytes are usually absent from occupied habitat.	Yes – Project intersects Bruneau River north of Hot Creek.	Bruneau River	9

**Table D.11-2. BLM Sensitive, Forest Service Sensitive, or MIS with the Potential to Occur within the Analysis Area**

Common Name	Scientific Name	Federal Agency Status	Habitat Description	Does the Species Have Distribution or Potential Habitat within the Analysis Area?	Habitat Unit used for Analysis	Segments Species may be Present In
<b>Mammals</b>						
Bighorn Sheep	<i>Ovis canadensis spp.</i>	BLM sensitive	Bighorn sheep inhabit grassy mountains, alpine meadows and foothill country near rocky cliffs that allow quick escape. Common summer habitat includes grazing lands at 6,000-8,500 feet in elevation and winter habitat occurs at 2,500-5,000 feet where snow is not very deep. California bighorns, a subspecies, are found in desert canyons of southwestern Idaho, while Rocky Mountain bighorns are found in the central Idaho mountains.	Potentially	Steep rocky areas	9
Big Brown Bat	<i>Eptesicus fuscus</i>	BLM sensitive	Species occupies a wide variety of habitats typically adjacent to perennial water, from desert scrub to coniferous forest, although it is most often observed in low deserts and basins and juniper woodlands. It roosts in cracks and crevices in high cliffs and canyons. It also may occasionally roost in buildings, caves, or abandoned mines, although cliffs are the only roosting habitat in which reproductive females have been documented.	Yes	Caves, Coniferous Forest, and Shrublands	8 and 9
California Myotis	<i>Myotis californicus</i>	BLM sensitive	Species occupies a wide variety of habitats including oak/juniper woodlands, canyons, riparian woodlands, desert scrub, and grasslands	Yes	Caves, Woodlands, and Sheublands	8 and 9
Dark Kangaroo Mouse	<i>Microdipodops megacephalus</i>	BLM sensitive	Habitat is found in loose sands and gravel in shadscale scrub, sagebrush scrub, and alkali sink plant communities. May occur in sand dunes near margins of range. The altitude of the habitat is around 1,190-2,455 m. Burrows are constructed in soft ground with the entrance near a shrub. Average home range for males is 6,613 square meters and 3,932 for females.	Yes – Species known to occur within portions of Owyhee County (ICDC and IDFG 2005).	Shrubland	8 and 9
Fringed Myotis	<i>Myotis thysanodes</i>	BLM sensitive	Conifer forests, woodland-chaparral, caves and mine; Habitat occurs within caves, mines, snags, rock outcrops, and human structures as roost sites, with foraging habitat often occurring within riparian areas. Open water habitats provide foraging habitat and these can include streams, reservoirs, stock tanks, and other water catchments. It also may occasionally roost in buildings, caves, or abandoned mines.	Unlikely but possible – Potential habitat for this species occurs within some segments of the Analysis Area. In addition a gross scale general distribution layer for this species overlaps with the Project area; however, suitable habitat and known distributions do not overlap. Therefore it is unlikely that this species occurs wihtin the analysis area.	Caves and coniferous Forest	8
Gray Wolf	<i>Canus lupus</i>	BLM sensitive	Wolves do not exhibit particular habitat preference except for the presence of native ungulates within its territory on a year round basis. While establishing new packs, wolves have demonstrated greater tolerance of human presence and disturbance than previously thought characteristic of this species.	Yes – The Analysis Area is in the Yellowstone and Central Idaho non-experimental population area. It is probable that transitory wolves may use portions of the Analysis Area while dispersing to new areas.	Known locations of wolf packs mapped by the IDCDC	8 and 9
Hoary Bat	<i>Lasiurus cinereus</i>	BLM sensitive	Species occupies a wide variety of habitats including forests, deserts, shrublands, and croplands. It also may occasionally roost in buildings, caves, or abandoned mines.	Yes	Caves, Forest, and Shrublands	8 and 9
Idaho Pocket Gopher	<i>Thomomy idahoensis</i>	BLM sensitive	Shallow stony soils in open sagebrush, sagebrush-grassland, and mountain meadow habitats; Idaho Pocket Gophers are active all year long. When they excavate burrows in the winter, they leave the dirt piled in snow tunnels.	Yes – Habitat for this species does occur within the Analysis Area.	Shrubland	8 and 9
Kit Fox	<i>Vulpes macrotis</i>	BLM sensitive	Habitat occurs within semi-desert shrubland and margins of pinyon-juniper woodland. Habitat typically has a saltbush, shadscale, sagebrush, and greasewood presence.	Yes – Habitat for this species occurs within the Analysis Area.	Shrubland	8 and 9
Little Brown Bat	<i>Myotis lucifugus</i>	BLM sensitive	Species occupies a wide variety of habitats desert scrub to coniferous forest. It roosts in cracks and crevices in high cliffs and canyons. It also may occasionally roost in buildings, caves, or abandoned mines.	Yes	Caves, Forest, and Shrublands	8 and 9
Long Legged Myotis	<i>Myotis evotis</i>	BLM sensitive	Species occupies a wide variety of habitats desert scrub to coniferous forest. It roosts in cracks and crevices in high cliffs and canyons. It also may occasionally roost in buildings, caves, or abandoned mines.	Yes	Caves, Forest, and Shrublands	8 and 9
Merriam's Ground Squirrel	<i>Spermophilus canus vigilis</i>	BLM sensitive	Shallow stony soils; Little is known about the subspecies. Their annual cycles and diet probably are similar to southern Idaho ground squirrels. Burrow diameter usually is <2 inches; entrances often under bushes or rocks.	Yes	West side of Snake River in west-central Idaho	8 and 9
Pallid Bat	<i>Antrozous pallidus</i>	BLM sensitive	Species is typically found in rocky aired areas near water. It also may occasionally roost in buildings, caves, or abandoned mines.	Yes	Caves or rocky habitats near riparian/wetlands	8 and 9
Pygmy Rabbit	<i>Brachylagus idahoensis</i>	BLM sensitive	Basin-prairie and riparian shrub: Species inhabits dense, tall stands of big sagebrush, usually along intermittent streams or riparian areas in sagebrush-grasslands. It is dependent on sagebrush, which comprises up to 99% of its winter diet. Also, since it excavates its own burrows, soft, deep soil is a key habitat feature.	Yes	Sagebrush shrubland	8 and 9
Piute Ground Squirrel	<i>Spermophilus mollis artemisae</i>	BLM sensitive	Species prefers areas with native shrubs, especially winterfat, and sagebrush.	Yes – Habitat for this species does occur within the Analysis Area.	Shrubland	8 and 9
Silver Haired Bat	<i>Lasionycteris noctivagans</i>	BLM sensitive	Species inhabits forested habitats near water. It also may occasionally roost in buildings, caves, or abandoned mines.	Yes	Caves and forested habitats near water	8 and 9

**Table D.11-2. BLM Sensitive, Forest Service Sensitive, or MIS with the Potential to Occur within the Analysis Area**

Common Name	Scientific Name	Federal Agency Status	Habitat Description	Does the Species Have Distribution or Potential Habitat within the Analysis Area?	Habitat Unit used for Analysis	Segments Species may be Present In
Mammals cont.						
Spotted Bat	<i>Euderma maculatum</i>	BLM sensitive	Species occupies a wide variety of habitats typically adjacent to perennial water, from desert scrub to coniferous forest, although it is most often observed in low deserts and basins and juniper woodlands. It roosts in cracks and crevices in high cliffs and canyons. It also may occasionally roost in buildings, caves, or abandoned mines, although cliffs are the only roosting habitat in which reproductive females have been documented.	Yes – Given the wide range of habitats utilized by this species and the overlap between known distribution in the Analysis Area, it is assumed that all segments may provide habitat. Analysis Area, although IDFG indicates it may not be present in southeastern Idaho (IDFG 2005)[1].	Caves, Coniferous Forest, and Shrublands	8 and 9
Swift Fox	<i>Vulpes velox</i>	BLM sensitive	Species prefers grasslands. Swift fox tend to be associated with short and mixed grass prairie. They form their dens in sandy soil on open prairies, in plowed fields, or along fences.	Yes – Habitat for this species does occur within the Analysis Area.	Grasslands	8 and 9
Townsend's Big-eared Bat	<i>Corynorhinus townsendii</i>	BLM sensitive	Species inhabits forests and basin-prairie shrub. Roosting habitat includes: caves, mines, snags, rock outcrops, and human structures. Similar habitat as the fringed myotis, but more closely associated with caves and mines for day roosts and hibernation sites. It is common in shrub-steppe, juniper woodlands and dry coniferous forests.	Yes – Potential habitat for species occurs within some segments of the Analysis Area including mines, snags, and caves.	Caves, Coniferous Forest, and Shrublands	8 and 9
Wyoming Ground Squirrel	<i>Spermophilus elegans nevadensis</i>	BLM sensitive	Primarily valley bottoms, foothills, grasslands and semidesert shrublands. Their geographic centers are in southwestern Montana, central and southwestern Wyoming, and southwestern Idaho, but populations occur in the states bordering these regions.	Yes – Habitat for this species does occur within the Analysis Area.	Grasslands and Shrublands	8 and 9
Yuma Myotis	<i>Myotis yumanensis</i>	BLM sensitive	Species occupies a wide variety of habitats typically adjacent to perennial water, from desert scrub to coniferous forest. It roosts in cracks and crevices in high cliffs and canyons. It also may occasionally roost in buildings, caves, or abandoned mines.	Yes	Caves, Coniferous Forest, and Shrublands	8 and 9
Birds						
American White Pelican	<i>Pelecanus erythrorhynchos</i>	BLM sensitive	Habitat occurs on a variety of aquatic and wetland habitats, including rivers, lakes, reservoirs (both large and small), estuaries, bays, marshes, and sometimes in inshore marine habitats. These habitats are used variously for nesting, loafing, and feeding. Nesting colonies usually are situated on islands or peninsulas in brackish or freshwater lakes, where they are isolated from mammalian predators.	Yes – Habitat for this species occurs within the Analysis Area.	Aquatic Habitats	8 and 9
Bald Eagle	<i>Haliaeetus leucocephalus</i>	BLM sensitive	Species typically occurs close to fish bearing open water, including major rivers, lakes, and reservoirs. Generally occupy riparian or lacustrine habitat as breeders but occasionally exploit upland areas for food. On rivers, they concentrate on runs and pools, riffles are important seasonally as prey fishes are spawning; lakes and reservoirs are used in shallow areas with gentle sloped shorelines and wetlands. Winter foraging habitat can include upland areas where they feed on carrion, and small mammals.	Yes – Both winter foraging and nesting habitat occurs within the Analysis Area. Bald eagles were observed within the transmission line corridor during raptor surveys conducted in April 2008. An active bald eagle nest was identified within the Kemmerer FO on April 6 in a heron rookery on the Hams Fork River. An active bald eagle nest was also identified within the Casper FO on the North Platte River on April 14 <sup>th</sup> . A pair of bald eagles were observed incubating or perched nearby. In addition, mutilpe eagle nests are known in the general area from agency surveys as well as existing data.	Aquatic Habitats, with emphasis on fisheries	8 and 9
Baird's Sparrow	<i>Ammodramus bairdii</i>	BLM sensitive	Species utilizes grasslands and weedy fields. Species does not inhabit prairie lands where fire suppression and changes in natural grazing patterns have allowed woody vegetation to grow excessively. Baird's Sparrows prefer to nest in native prairie, but structure may ultimately be more important than plant species composition.	Yes – Potential habitat for this species occurs intermittently throughout the Analysis Area.	Grasslands	8 and 9
Black Tern	<i>Chlidonias niger</i>	BLM sensitive	Preferred summer habitats for this species occurs in inland marshes and sloughs, typically with fairly dense cattail or other marsh vegetation and pockets of open water. These wetlands are often shallow in nature. Winter habitat is on the coasts of South America.	Yes – Habitat for this species occurs intermittently throughout most segments.	Wetlands	8 and 9
Black-throated Sparrow	<i>Amphispiza bilineata</i>	BLM sensitive	Species prefers a sparse, isolated desert environment. Hot, dry weather in the desert uplands, creosote bush and scrub environments are the most frequent habitats. These sparrows prefer terrain that is either steeply sloped or very flat. Besides desert uplands, they also favor alluvial fans and hill slopes, usually with much exposed rock and gravel pavement. Within the Analysis Area, habitat most likely occurs within sagebrush communities.	Yes – This species is not common within the Analysis Area; However, potential habitat does occur within Idaho and southwestern Wyoming.	Shrubland	8 and 9
Brewer's Sparrow	<i>Spizella breweri</i>	BLM sensitive	Species is closely associated with sagebrush, preferring dense stands broken up with grassy areas. In the northern part of their range, they can be found in habitats such as sub-alpine fir or dwarf birch, or montane pinon-juniper woodlands.	Yes – Habitat for the species does occur within the Analysis Area.	Grasslands and Shrublands	8 and 9
Burrowing Owl	<i>Athene cunicularia</i>	BLM sensitive	Grasslands, basin-prairie shrub: owls use vacant rodent burrows, mainly associated with prairie dog habitat. In Wyoming, the highest concentrations of burrowing owls are in the south and east, although they occur and breed throughout the state (WGFD. ND).	Yes – Breeding records within the region of Analysis Area are associated with prairie dog colonies (WGFD. ND.).	Grasslands and Shrublands	8 and 9

Table D.11-2. BLM Sensitive, Forest Service Sensitive, or MIS with the Potential to Occur within the Analysis Area

Common Name	Scientific Name	Federal Agency Status	Habitat Description	Does the Species Have Distribution or Potential Habitat within the Analysis Area?	Habitat Unit used for Analysis	Segments Species may be Present In
Birds cont.						
Cassin's Finch	<i>Carpodacus cassinii</i>	BLM sensitive	Species typically inhabits coniferous forests; often associated with groves of quaking aspen.	Yes - Range overlaps the Analysis Area.	Coniferous Forest	8 and 9
Columbian Sharp-Tailed Grouse	<i>Tympanuchus Phasianellus columbianus</i>	BLM sensitive	Species inhabits mountain-foothills shrub communities of serviceberry, snowberry, chokecherry, and Gambel oak; sagebrush-grassland; and willow riparian habitats. In Wyoming, it prefers mountain-foothills shrub and sagebrush-snowberry habitats in the transitional zone between sagebrush-grass and forested habitats. Forest habitats (riparian draws) may provide winter forage. Leks are the center of breeding activity and are typically located in areas with little slope and low, sparse vegetation, such as knolls, ridgetops, or benches that allow good visibility.	Yes – Columbian sharp-tailed grouse leks and suitable habitat have been documented within the Analysis Area.	Shrubland	9
Ferruginous Hawk	<i>Buteo regalis</i>	BLM sensitive	Species uses mixed-grass prairie communities and is often associated with little bluestem, prairie June grass, green needle-grass, western wheatgrass, and Kentucky bluegrass. Trees are common nest sites, including eastern cottonwoods, peachleaf willow, juniper, box elder maple, green ash, Chinese elm, and American elm. Species also uses sagebrush and saltbrush, greasewood shrublands.	Yes – Nest sites have been documented within the Analysis Area. The ICDC documented multiple nest sites within segments 7, 8, and 9, and the WNDD documented nest sites within segments 1W, 1E, 2, 3, and 4.	Grasslands	8 and 9
Golden Eagle	<i>Aquila chrysaetos</i>	BLM sensitive	Species inhabits a broad range of habitats such as open mountains, foothills, plains, and other open country. Often found along cliffs or other habits that provide thermals and suitable nesting habitat.	Yes - Range overlaps the Analysis Area and some nests are known to occur withi 1 mile of the Project.	Open habitat types	8 and 9
Green-Tailed Towhee	<i>Pipilo chlorurus</i>	BLM sensitive	Species inhabits semi-open habitats that have a low cover of sagebrush.	Yes - Range overlaps the Analysis Area.	Shrubland	8 and 9
Loggerhead Shrike	<i>Lanius ludovicianus</i>	BLM sensitive	Species habitat occurs in basin-prairie shrub and mountain-foothill shrub. Species prefers open habitat including shrub-steppe, deserts and grasslands with access to elevated perches and impaling stations. Feeds mostly on large insects such as grasshoppers and beetles but some small birds and rodents are also taken.	Yes – Habitat occurs throughout the Analysis Area. Nesting has been documented in the ICDC within the proposed Segment 8.	Shrublands and Grasslands	8 and 9
Long-billed Curlew	<i>Numenius americanus</i>	BLM sensitive	Habitat occurs in grasslands, plains, foothills, and wet meadows. Species selects open habitats year-round. During the breeding season, they frequent prairies and grasslands, as well as plowed fields, meadows, and pastures.	Yes – Habitat for this species occurs throughout the Analysis Area. The ICDC records indicate that the species has been documented within the Analysis Area along the Segment 8 routes and nesting has been documented within the Analysis Area along the Segment 9 routes.	Grasslands	8 and 9
Mountain Quail	<i>Oreortyx pictus</i>	BLM sensitive	Habitat includes mixed evergreen forests and woodlands. Species are typically found in dense cover with scattered open areas on slopes in foothills and mountains. They use the dense thickets resulting from fires or clearcuts, and they are seldom found far from this cover. In summer, the quail require a source of water, which may limit their nesting range.	Yes	Coniferous Forest and Shrubland	8 and 9
Northern Goshawk	<i>Accipter gentilis</i>	BLM sensitive	Species occurs within mature conifer and deciduous forests. Species is a forest habitat generalist and requires abundant prey base, possibly related to understory shrub development in forested habitat. Generally considered to prefer mature coniferous forests, but will also inhabit deciduous and mixed forests from sea level to subalpine areas.	Yes – Suitable and potential habitat occurs within the Analysis Area.	Mature Coniferous and Deciduous Forests	9
Olive-sided Flycatcher	<i>Contopus borealis</i>	BLM sensitive	Olive-sided flycatchers are generally restricted to coniferous or mixed-coniferous forests. Throughout their breeding range, they primarily occur in montane, subalpine, and boreal forests. In addition, they often occur along wooded shores of lakes, rivers, and bogs where forest edges, variation in tree height, and standing dead trees are found. This species is most often associated with forest edges and openings caused by natural or anthropogenic disturbances, including small forest gaps resulting from tree death in old-growth forests, or along the edges of early successional forests. Olive-sided flycatchers usually do not occur in closed canopy forests and are uncommon in forests in the sapling-pole or mature forest stages that lack gaps or edges.	Yes	Forest	9
Peregrine Falcon	<i>Falco peregrinus</i>	BLM sensitive	Tall cliffs: Nests near rocky cliffs and often hunts near water.	Yes	Rocky habitats near riparian/wetlands areas used for hunting	8 and 9
Pinyon Jay	<i>Gymnorhinus cyanocephalus</i>	BLM sensitive	Species inhabits pinyon/juniper woodlands and ponderosa spine forests.	Yes - Species range overlaps the Analysis Area.	Forests	9
Prairie Falcon	<i>Falco mexicanus</i>	BLM sensitive	This species tends to occupy open treeless terrain including prairies, deserts, riverine escarpments, canyons, foothills, and mountains.	Yes – Found all year in Idaho and Wyoming.	Shrublands and Grasslands	8 and 9
Sage Sparrow	<i>Amphispiza belli</i>	BLM sensitive	Basin-prairie shrub, mountain-foothill shrub: Species breeds in open, shrublands, most commonly in sagebrush grassland areas. These sparrows favor dense stands of sagebrush with a modest amount of understory vegetation. Winter habitat for sage sparrows is found in open flats, deserts and dry chaparral of the Southwest.	Yes	Sagebrush	8 and 9

Table D.11-2. BLM Sensitive, Forest Service Sensitive, or MIS with the Potential to Occur within the Analysis Area

Common Name	Scientific Name	Federal Agency Status	Habitat Description	Does the Species Have Distribution or Potential Habitat within the Analysis Area?	Habitat Unit used for Analysis	Segments Species may be Present In
Birds cont.						
Sage Thrasher	<i>Oreoscoptes montanus</i>	BLM sensitive	Basin-prairie shrub, mountain-foothill shrub: The species is a sagebrush obligate as they are common inhabitants of shrub-steppe communities that are dominated by big sagebrush. Nest-site selection is specific as most nests are located within or beneath sagebrush plants with high foliage and branch density. Dense patches of large sagebrush plants and low densities of exotic plants also seem to be an important habitat characteristic for sage thrashers.	Yes	Sagebrush	8 and 9
Short Eared Owl	<i>Asio flammeus</i>	BLM sensitive	The short eared owl typically inhabits open habitats including grasslands, sagebrush, marshes, and tundra.	Yes	Open grassland and sagebrush habitats	8 and 9
Swainson's Hawk	<i>Buteo swainsoni</i>	BLM sensitive	This species inhabits open pine-oak woodlands with a abundant shrub-grass component, grasslands, and cultivated farmlands. Nests in trees or bushes.	Yes	Shrublands and Grasslands	8 and 9
Fish						
Bluehead Sucker	<i>Catostomus discobolus</i>	BLM sensitive	Bear, Snake, and Green drainages, all waters. This species has been reported to typically be found in runs or riffles with rock or gravel substrate. Juveniles have been collected from shallow riffles, backwaters, and eddies with silt or gravel substrate. Although the species generally inhabits streams with cool temperatures, bluehead suckers have been found inhabiting small creeks with water temperatures as high as 82.4°F). This species is found in a large variety of river systems ranging from large rivers with discharges of several hundred cubic meters per sec to small creeks with less than a 0.05 cubic meters per second (1.8 cubic feet per sec).	Yes	Snake and Green River drainages	8 and 9
Fine-spotted Cutthroat Trout, Snake River Cutthroat	<i>Oncorhynchus clarki</i> spp	BLM sensitive	Snake River drainage, clear, fast water.	Yes – Occurs in Snake River and drainages.	Snake River	8 and 9
Redband Trout	<i>Oncorhynchus mykiss gairdneri</i>	BLM sensitive	Redband trout occur in inland drainages of the Pacific Northwest. Great Basin redband trout are found in arid forest and desert environments characterized by extreme fluctuations in stream flow and temperature.	Yes – Occurs in Snake River drainages.	Snake River	8 and 9
Shoshone Sculpin	<i>Cottus greenei</i>	BLM sensitive	Shoshone sculpin are found in approximately two dozen springs/streams in the Hagerman Valley. Their habitat is essentially restricted to the clear, cool (60.8 degrees Fahrenheit) well oxygenated water of the Thousand Springs Formation. They select low velocity waters with abundant gravel, rock, and aquatic vegetation.	Yes – Occurs in Hagerman Valley.	Waterbodies	8
Westslope Cutthroat Trout	<i>Oncorhynchus clarki lewisi</i>	BLM sensitive	Westslope cutthroat are common in both headwaters lake and stream environments. The newborn fry frequently migrate back to lakes to rear after 1 to 2 years in their native stream. Spawning and rearing streams tend to be cold and nutrient poor. Westslope cutthroat trout seek out gravel substrate in riffles and pool crests for spawning habitat. Westslope cutthroat trout also require cold water. Westslope cutthroat trout tend to thrive in streams with more pool habitat and cover than uniform, simple habitat. Juvenile cutthroat trout overwinter in the interstitial spaces of large stream substrate. Adult cutthroat trout need deep, slow moving pools that do not fill with anchor ice in order to survive the winter.	Yes – Occurs in Snake River and drainages.	Snake River	8 and 9
White Sturgeon	<i>Acipenser transmontanus</i>	BLM sensitive	Species lives at the bottom of slow-moving rivers, bays, and estuaries. This species spends most of its time in the marine environment, but moves into river habitats in order to spawn.	Yes - Present in Snake River from Shoshone Falls downstream to confluence with Columbia River.	Snake River	8 and 9
Wood River Sculpin	<i>Cottus leiopomus</i>	BLM sensitive	The Wood River sculpin occurs only in the Wood River drainage in south–central Idaho. The Wood River sculpin occurs mainly in small to medium sized streams with cool, clear waters and a swift current. Individuals are most commonly found in riffles and runs with a gravel or cobble substrate.	Yes	Waterbodies	8
Yellowstone Cutthroat Trout	<i>Oncorhynchus clarki bouvieri</i>	BLM sensitive	Yellowstone, Bighorn, and Snake River drainage, small mountain streams and large rivers (including Raft River, Goose Creek, Piney Creek, and Trout Creek)	Yes	Snake River	8 and 9
Reptiles						
Great Basin Black-Collard Lizard	<i>Crotaphytus bicinctores</i>	BLM sensitive	Species primarily inhabitas desert scrub and grasslands.	Likely	Desert scrub and grasslands	8 and 9
Longnose Snake	<i>Rhinocheilus lecontei</i>	BLM sensitive	Arid and semi-arid deserts, grasslands, shrublands, and prairies. Sea level to 6,200 ft.	Yes – Occurs at Bruneau Sand Dunes.	Sand dunes	9
Mojave Black-collared Lizard	<i>Crotaphytus bicinctores</i>	BLM sensitive	Isolated populations occur in eastern Idaho and Utah. Prefers arid rocky hilly deserts with sparse vegetation, but sometimes found in areas with few rocks.	Yes – Occurs in Ada, Canyon, and Elmore counties.	Shrublands	8 and 9
Western Ground Snake	<i>Sonora semiannulata</i>	BLM sensitive	Inhabits areas with surface cover and some moisture: grassland, riverbottoms, desert flats, ranchland, sand hummocks, open rocky hillsides with loose soil, sandy washes, dry streambeds, and riparian thickets.	Yes – Occurs near Hammet.	Riparian areas	8 and 9

**Table D.11-2. BLM Sensitive, Forest Service Sensitive, or MIS with the Potential to Occur within the Analysis Area**

Common Name	Scientific Name	Federal Agency Status	Habitat Description	Does the Species Have Distribution or Potential Habitat within the Analysis Area?	Habitat Unit used for Analysis	Segments Species may be Present In
Amphibians						
Western Boreal Toad and Eastern sub-groups	<i>Anaxyrus boreas</i> and <i>Anaxyrus boreas boreas</i>	BLM sensitive	Pond margins, wet meadows, riparian areas. Boreal toads live in a wide range of habitats in western North America: wetlands, forests, woodlands, sagebrush, meadows, and floodplains in the mountains and valleys. Boreal toads generally occur between 7,500 and 12,000 feet in Region 2. The wetland habitat classification system of Cowardin et al. (1979) defines the following wetland classes: aquatic bed, streambed, rocky shore, unconsolidated shore, emergent wetland (persistent and non-persistent), scrub-shrub wetland, and forested wetland. Boreal toads are likely to be found within these classes in Riverine, Lacustrine, and Palustrine wetland systems.	Yes	Locations mapped by Idaho CDC and WYNDD	8 and 9
Northern Leopard Frog	<i>Rana pipiens</i>	BLM sensitive	Beaver ponds, permanent water in plains and foothills. Springs, slow streams, marshes, bogs, ponds, canals, flood plains, reservoirs, and lakes; usually permanent water with rooted aquatic vegetation. In summer, commonly inhabits wet meadows and fields. Takes cover underwater, in damp niches, or in caves when inactive. Overwinters usually underwater.	Yes	Wetland habitat mapped for the Northern Leopard Frog	8 and 9
Spotted Frog	<i>Rana pretiosa (lutiventris)</i>	BLM sensitive	Ponds, sloughs, small streams. Columbia Spotted Frogs are fairly aquatic and are generally found in or near permanent bodies of water such as lakes, ponds, sluggish streams and marshes. The littoral zone is generally comprised of emergent vegetation including grasses and sedges. During the summer these frogs can be found some distance from the breeding sites but still associated with moist vegetation. Found from sea level to about 9,842 feet, usually in hilly areas near cool, permanent, quiet water in streams, rivers, lakes, pools, springs, and marshes. Highly aquatic, but may disperse into forests, grasslands, and brushlands. In the Northwest, prefers areas with thick algae and emergent vegetation, but may use sunken, dead, or decaying vegetation as escape cover.	Yes – Riparian/wetland habitats mapped for this species are present within Segment 4.	Riparian and wetland habitats	9
Woodhouse Toad	<i>Bufo woodhousii</i>	BLM sensitive	Inhabits a wide variety of habitats - irrigation ditches, temporary pools, backyards, grassland, sagebrush flats, woods, desert streams, farms, river floodplains. Prefers sandy areas. From below sea level to 8,500 ft (2,600 m).	Yes – Occurs in Ada, Canyon and Elmore County and eastern Wyoming counties.	Wetland and adjacent upland habitats	9
Invertebrates						
Ashy Pebblesnail	<i>Fluminicola fuscus</i>	BLM sensitive	Species inhabits cold, highly oxygenated water in rivers with a swift current and gravel to boulder substrate.	Yes - Reported as possible inhabiting lower Snake River in free flowing sections, not in impounded areas. Ashy Pebblesnails are noted at “abundant” in the Hagerman Valley section of the Snake River.	Snake River	8 and 9
Bruneau Dunes Tiger Beetle	<i>Cicindela waynei waynei</i>	BLM sensitive	This species primarily occurs in the sparsely vegetated margins of sand dunes. Adults can be found on dunes but spend much of their time on more stabilized substrate in saddles between dunes. Larvae develop in burrows in flat areas in the narrow area between the drifting sand of the dunes and the established desert plant community. Such sites usually having a covering of small gravel or pebbles.	Yes – Occurs in Minidoka, Blain, and Power Counties.	Sand dunes in Owyhee County	9
Blind Cave Leiodid Beetle	<i>Glacivicola bathyscoides</i>	BLM sensitive	This species is known only from southern Idaho and westernmost Wyoming. This species has only been found in lava tube caves in the vicinity of permanent ice.	Yes – Occurs in Lincoln and Power County.	Lava tube caves in the vicinity of permanent ice in Lincoln and Power County	8
California Floater	<i>Anodonta californiensis</i>	BLM sensitive	The California floater, a freshwater mussel, is found in the Snake River in scattered locations between Bliss and Alkali Creek. The California floater prefers habitats immediately upstream or downstream of rapids in mud-sand substrates with good water quality.	Yes – Occurs in Elmore, Gooding, Jerome, and Twin Falls County, Idaho.	Wetlands	8 and 9
Columbia Pebblesnail	<i>Fluminicola fuscus</i>	BLM sensitive	The Columbia pebblesnail is found in the Snake River below Lower Salmon Falls Dam and in the tailwaters of the Bliss Dam. The pebblesnail lives in flowing waters and uses gravel- to boulder-sized substrate at the edges or downstream of rapids and whitewater areas.	Yes – Occurs in Gooding and Twin Falls County, Idaho.	Wetlands and waterbodies	8 and 9
St. Anthony Sand Dunes Tiger Beetle	<i>Cicindela arenicola</i>	BLM sensitive	This species is found on sand dunes. Larvae live in burrows located in flat, grassy areas where the sand is at least a meter thick, often on the windward side of sand dunes.	Yes – Occurs in Bannock, Power, Blaine, Minidoka, Lincoln, and possibly Bingham counties.	Sand dunes	9
Shortface Lanx	<i>Fisherola nuttalli</i>	BLM sensitive	Shortface lanx inhabits cold, unpolluted, medium to large streams with fast-flowing, well-oxygenated water and cobbleboulder substrate, and is generally found at the edges of rapids. Current populations occur in the Snake River.	Yes – Occurs in Snake River.	Snake River	8 and 9

Table D.11-3. Miles of Habitat Crossed for Federal ESA Wildlife Species with Available Quantitative Data

Segment Number	Revised Proposed Routes, Other Routes, and Route Variations	Segment Length in Miles	Miles of Habitat Crossed						
			Black-Footed Ferret	Canada Lynx	Columbia Spotted Frog <sup>5/</sup>	Greater Sage-Grouse <sup>5/</sup>	Grizzly Bear	Preble's Meadow Jumping Mouse	Yellow-Billed Cuckoo <sup>6/</sup>
8	Revised Proposed Route	129.7			0.2	71.9 [7.2]			0.1
	Proposed – Existing 500-kV Removal <sup>1/</sup>	1.1							
	Route 8G	146.9			0.5	93.7 [4.6]			t <sup>2/</sup>
	Route 8G – Existing 500-kV Removal	1.9				0.2			
	Route 8H	137.5			0.4 [0.3]	71.8 [26.2]			
	Route 8H – Existing 138-kV Removal	25.7			t <sup>2/</sup> [t <sup>2/</sup> ]	13.9 [12.3]			
	Route 8H – Existing 500-kV Removal	1.9				0.2			
9	Revised Proposed Route	165.3			0.4[0.3]	101.6 [26.3]			
	Proposed – Existing 138-kV Removal <sup>1/</sup>	25.7			t <sup>2/</sup> [t <sup>2/</sup> ]	13.9 [12.3]			
	Segment 9 FEIS Proposed Route	162.2			1.0 [t <sup>2/</sup> ]	103.4 [6.9]			
	Route 9K	174.6			0.4	124.1 [4.8]			t <sup>2/</sup>
	Proposed – Comparison portion for Toana Road Variations 1/1-A	8.7				8.3			
	Toana Road Variation 1	8.5				8.5			
	Toana Road Variation 1-A	8.9				8.8			
8/9	Comparison portion for the Alternative 5 WWE Corridor and Alternative 5 Helicopter-assisted Construction Variations	66.1 <sup>3/</sup>			0.3	43.1			0.1
	Alternative 5 WWE Corridor Variation	62.2 <sup>4/</sup>			0.6 [t <sup>2/</sup> ]	44.0 [5.7]			
	Alternative 5 Helicopter-assisted Construction Variation	66.1 <sup>3/</sup>			0.3	43.1			0.1

Notes: Mileages have been rounded to the nearest tenth of a mile; therefore, numbers are inexact and columns/rows may not sum exactly

Blank cells indicate zero miles or null value

The numbers in square brackets "[ ]" correspond to impacts that would occur on BLM-managed lands within the SRBOP

<sup>1/</sup> Portions of the disturbance areas may overlap; therefore, actual effects may be less than presented

<sup>2/</sup> "t" indicates only a trace amount (<0.1 mile) crossed

<sup>3/</sup> This variation consists of approximately 32.9 miles of Route 8G and 33.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

<sup>4/</sup> This variation consists of approximately 31.0 miles of Route 8G and 31.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

<sup>5/</sup> While this species was considered a candidate species under the ESA during the FEIS timeframe, the USFWS determined (in September 2015 for the greater sage-grouse and October 2015 for the Columbia spotted frog) that it does not require protection under the ESA. For purposes of maintaining data location and analysis consistency with the structure of the FEIS, however, this species has been retained in this ESA-related table (as opposed to a BLM sensitive species table).

<sup>6/</sup> The BLM has determined that none of the impacted habitats identified in this table for the Yellow-Billed Cuckoo contain the necessary characteristics of breeding habitat (e.g., cottonwoods with a dense understory of willow or dogwood)

Source: Gergely and McKerrow 2013



**Table D.11-4. Miles of Habitat Crossed for BLM and Forest Service Sensitive Species with Available Quantitative Data**

Segment Number	Revised Proposed Routes, Other Routes, and Route Variations	Segment Length in Miles	Miles of Habitat Crossed											
			Bald Eagle		Black-Tailed Prairie Dog		Burrowing Owl	Columbian Sharp-Tailed Grouse	Mountain Plover	Northern Goshawk	Northern Leopard Frog	Pygmy Rabbit	White-Tailed Prairie Dog	Wyoming Pocket Gopher
			Within a 1-mile Nest Buffer	Within a 1-mile Winter Roost Buffer	Colony	Complex <sup>1/</sup>				within a 1-mile Nest Buffer				
8	Revised Proposed Route	129.7	2.0				109.4 [17.3]				1.2 [t <sup>3/</sup> ]	108.2 [17.3]		
	Proposed – Existing 500-kV Removal <sup>2/</sup>	1.1					0.9 [0.3]					0.9 [0.3]		
	Route 8G	146.9	1.8	t <sup>3/</sup>			121.9 [7.0]				0.8	112.6 [7.0]		
	Route 8G – Existing 500-kV Removal	1.9					1.2					0.3		
	Route 8H	137.5	1.5	t <sup>3/</sup> [t <sup>3/</sup> ]			114.0 [49.1]				1.0 [0.3]	111.3 [48.4]		
	Route 8H – Existing 138-kV Removal	25.7					23.9 [19.2]				0.1 [t <sup>3/</sup> ]	23.3 [19.2]		
	Route 8H – Existing 500-kV Removal	1.9					1.2					0.3		
9	Revised Proposed Route	165.3	1.6	t <sup>3/</sup> [t <sup>3/</sup> ]			146.3 [49.1]	1.8			0.8 [0.3]	141.1 [48.3]		
	Proposed – Existing 138-kV Removal <sup>2/</sup>	25.7					23.9 [19.2]				0.1 [t <sup>3/</sup> ]	23.3 [19.2]		
	Segment 9 FEIS Proposed Route	162.2	1.6				131.7 [9.3]	1.8			1.3 [t <sup>3/</sup> ]	111.1 [8.2]		
	Route 9K	174.6	1.9				152.1 [6.7]	1.8			0.5	141.1 [6.7]		
	Proposed – Comparison portion for Toana Road Variations 1/1-A	8.7					8.0					7.8		
	Toana Road Variation 1	8.5					8.4					8.4		
	Toana Road Variation 1-A	8.9					8.7					8.7		
8/9	Comparison portion for the Alternative 5 WWE Corridor and Alternative 5 Helicopter-assisted Construction Variations	66.1 <sup>4/</sup>	3.7				56.6				0.3	47.9		
	Alternative 5 WWE Corridor Variation	62.2 <sup>5/</sup>	3.1				50.0 [6.3]				0.6 [t <sup>3/</sup> ]	32.6 [4.8]		
	Alternative 5 Helicopter-assisted Construction Variation	66.1 <sup>4/</sup>	3.7				56.6				0.3	47.9		

Notes: Mileages have been rounded to the nearest tenth of a mile; therefore, numbers are inexact and columns/rows may not sum exactly

Blank cells indicate zero miles or null value

The numbers in square brackets "[ ]" correspond to impacts that would occur on BLM-managed lands within the SRBOP

<sup>1/</sup> The number of “colony” miles crossed represents colonies that are not part of complexes; the sum of the two numbers, “colonies” and “complexes,” adds up to total miles of prairie dog habitat crossed.

<sup>2/</sup> Portions of the disturbance areas may overlap; therefore, actual effects may be less than presented

<sup>3/</sup> "t" indicates only a trace amount (<0.1 mile) crossed

<sup>4/</sup> This variation consists of approximately 32.9 miles of Route 8G and 33.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

<sup>5/</sup> This variation consists of approximately 31.0 miles of Route 8G and 31.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

Source: IDFG 2014, ReGAP 2016, Tetra Tech 2016

Table D.11-5. Acres of Construction Impacts to Federal ESA Wildlife Species with Available Quantitative Data

Segment Number	Revised Proposed Routes, Other Routes, and Route Variations	Segment Length in Miles	Acres of Construction Impacts						
			Black-Footed Ferret	Canada Lynx	Columbia Spotted Frog <sup>4/</sup>	Greater Sage-Grouse <sup>4/</sup>	Grizzly Bear	Preble's Meadow Jumping Mouse	Yellow-Billed Cuckoo <sup>5/</sup>
8	Revised Proposed Route	129.7			3	1,259 [109]			2
	Proposed – Existing 500-kV Removal <sup>1/</sup>	1.1							
	Route 8G	146.9			3	1,689 [90]			1
	Route 8G – Existing 500-kV Removal	1.9				1			
	Route 8H	137.5			2 [2]	1,271 [468]			
	Route 8H – Existing 138-kV Removal	25.7				26 [23]			
	Route 8H – Existing 500-kV Removal	1.9				1			
9	Revised Proposed Route	165.3			3	1,840 [460]			
	Proposed – Existing 138-kV Removal <sup>1/</sup>	25.7				26 [23]			
	Segment 9 FEIS Proposed Route	162.2			13 [1]	1,925 [168]			<1
	Route 9K	174.6			3	2,284 [86]			1
	Proposed – Comparison portion for Toana Road Variations 1/1-A	8.7				167			
	Toana Road Variation 1	8.5				162			
	Toana Road Variation 1-A	8.9				156			
8/9	Comparison portion for the Alternative 5 WWE Corridor and Alternative 5 Helicopter-assisted Construction Variations	66.1 <sup>2/</sup>			2	723 [7]			2
	Alternative 5 WWE Corridor Variation	62.2 <sup>3/</sup>			4	774 [106]			
	Alternative 5 Helicopter-assisted Construction Variation	66.1 <sup>2/</sup>			2	617 [8]			2

Notes: Acreages have been rounded to the nearest whole acre; therefore, numbers are inexact and columns/rows may not sum exactly

Blank cells indicate zero acres or null value

The numbers in square brackets "[ ]" correspond to impacts that would occur on BLM-managed lands within the SRBOP

<sup>1/</sup> Portions of the disturbance areas may overlap; therefore, actual effects may be less than presented

<sup>2/</sup> This variation consists of approximately 32.9 miles of Route 8G and 33.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

<sup>3/</sup> This variation consists of approximately 31.0 miles of Route 8G and 31.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

<sup>4/</sup> While this species was considered a candidate species under the ESA during the FEIS timeframe, the USFWS determined (in September 2015 for the greater sage-grouse and October 2015 for the Columbia spotted frog) that it does not require protection under the ESA. For purposes of maintaining data location and analysis consistency with the structure of the FEIS, however, this species has been retained in this ESA-related table (as opposed to a BLM sensitive species table).

<sup>5/</sup> The BLM has determined that none of the impacted habitats identified in this table for the Yellow-Billed Cuckoo contain the necessary characteristics of breeding habitat (e.g., cottonwoods with a dense understory of willow or dogwood)

Source: ReGAP 2016, Tetra Tech 2016

**Table D.11-6.** Acres of Construction Impacts to BLM and Forest Service Sensitive Species with Available Quantitative Data

Segment Number	Revised Proposed Routes, Other Routes, and Route Variations	Segment Length in Miles	Acres of Habitat Impacted by Construction											
			Bald Eagle		Black-Tailed Prairie Dog		Burrowing Owl	Columbian Sharp-Tailed Grouse	Mountain Plover	Northern Goshawk	Northern Leopard Frog	Pygmy Rabbit	White-Tailed Prairie Dog	Wyoming Pocket Gopher
			Within a 1-mile Nest Buffer	Within a 1-mile Winter Roost Buffer	Colony	Complex <sup>1/</sup>				Within a 1-mile Nest Buffer				
8	Revised Proposed Route	129.7	40				1,936 [260]				23	1,920 [260]		
	Proposed – Existing 500-kV Removal <sup>2/</sup>	1.1					7 [3]					7 [3]		
	Route 8G	146.9	32				2,283 [153]				6 [<1]	2,122 [149]		
	Route 8G – Existing 500-kV Removal	1.9					8					4		
	Route 8H	137.5	20	<1			2,135 [940]				9 [2]	2,090 [921]		
	Route 8H – Existing 138-kV Removal	25.7					45 [36]					44 [36]		
	Route 8H – Existing 500-kV Removal	1.9					8					4		
9	Revised Proposed Route	165.3	24	<1			2,738 [930]	39			7 [2]	2,609 [911]		
	Proposed – Existing 138-kV Removal <sup>2/</sup>	25.7					45 [36]					44 [36]		
	Segment 9 FEIS Proposed Route	162.2	33				2,592 [240]	34			16 [1]	2,225 [224]		
	Route 9K	174.6	33				2,890 [145]	39			4 [<1]	2,652 [141]		
	Proposed – Comparison portion for Toana Road Variations 1/1-A	8.7					155					148		
	Toana Road Variation 1	8.5					151					151		
	Toana Road Variation 1-A	8.9					151					151		
8/9	Comparison portion for the Alternative 5 WWE Corridor and Alternative 5 Helicopter-assisted Construction Variations	66.1 <sup>3/</sup>	55				975 [7]				2	809 [3]		
	Alternative 5 WWE Corridor Variation	62.2 <sup>4/</sup>	55				912 [124]				4	629 [111]		
	Alternative 5 Helicopter-assisted Construction Variation	66.1 <sup>3/</sup>	55				846 [7]				2	711 [3]		

Notes: Acreages have been rounded to the nearest whole acre; therefore, numbers are inexact and columns/rows may not sum exactly

Blank cells indicate zero acres or null value

The numbers in square brackets "[ ]" correspond to impacts that would occur on BLM-managed lands within the SRBOP

<sup>1/</sup> The number of “colony” acres impacted represents colonies that are not part of complexes; the sum of the two numbers, “colonies” and “complexes,” adds up to total acres of prairie dog habitat impacted.

<sup>2/</sup> Portions of the disturbance areas may overlap; therefore, actual effects may be less than presented

<sup>3/</sup> This variation consists of approximately 32.9 miles of Route 8G and 33.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

<sup>4/</sup> This variation consists of approximately 31.0 miles of Route 8G and 31.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

Source: IDFG 2014, ReGAP 2016, Tetra Tech 2016

Table D.11-7. Acres of Operations Impacts to Federal ESA Wildlife Species with Available Quantitative Data

Segment Number	Revised Proposed Routes, Other Routes, and Route Variations	Segment Length in Miles	Acres of Operation Impacts						
			Black-Footed Ferret	Canada Lynx	Columbia Spotted Frog <sup>5/</sup>	Greater Sage-Grouse <sup>5/</sup>	Grizzly Bear	Preble's Meadow Jumping Mouse	Yellow-Billed Cuckoo <sup>6/</sup>
8	Revised Proposed Route	129.7				140 [10]			2
	Proposed – Existing 500-kV Removal <sup>1/</sup>	1.1							
	Route 8G	146.9			<1 [<1]	209 [17]			1
	Route 8G – Existing 500-kV Removal	1.9							
	Route 8H	137.5			<1 [<1]	135 [41]			
9	Revised Proposed Route	165.3			<1 [<1]	194 [41]			
	Proposed – Existing 138-kV Removal <sup>1/</sup>	25.7							
	Segment 9 FEIS Proposed Route	162.2			2 [<1]	210 [17]			
	Route 9K	174.6			<1 [<1]	268 [16]			1
	Proposed – Comparison portion for Toana Road Variations 1/1-A	8.7				15			
	Toana Road Variation 1	8.5				15			
	Toana Road Variation 1-A	8.9				11			
8/9	Comparison portion for the Alternative 5 WWE Corridor and Alternative 5 Helicopter-assisted Construction Variations	66.1 <sup>2/</sup>			<1	58 [2]			2
	Alternative 5 WWE Corridor Variation	62.2 <sup>3/</sup>			<1	54 [11]			
	Alternative 5 Helicopter-assisted Construction Variation	66.1 <sup>2/</sup>			t <sup>4/</sup>	36 [2]			2

Notes: Acreages have been rounded to the nearest whole acre; therefore, numbers are inexact and columns/rows may not sum exactly

Blank cells indicate zero acres or null value

The numbers in square brackets "[ ]" correspond to impacts that would occur on BLM-managed lands within the SRBOP

<sup>1/</sup> Portions of the disturbance areas may overlap; therefore, actual effects may be less than presented

<sup>2/</sup> This variation consists of approximately 32.9 miles of Route 8G and 33.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

<sup>3/</sup> This variation consists of approximately 31.0 miles of Route 8G and 31.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

<sup>4/</sup> "t" indicates only a trace amount (<0.1 acre) of occupancy

<sup>5/</sup> While this species was considered a candidate species under the ESA during the FEIS timeframe, the USFWS determined (in September 2015 for the greater sage-grouse and October 2015 for the Columbia spotted frog) that it does not require protection under the ESA. For purposes of maintaining data location and analysis consistency with the structure of the FEIS, however, this species has been retained in this ESA-related table (as opposed to a BLM sensitive species table).

<sup>6/</sup> The BLM has determined that none of the impacted habitats identified in this table for the Yellow-Billed Cuckoo contain the necessary characteristics of breeding habitat (e.g., cottonwoods with a dense understory of willow or dogwood)

Source: ReGAP 2016, Tetra Tech 2016

Table D.11-8. Acres of Operations Impacts to BLM and Forest Service Sensitive Species with Available Quantitative Data

Segment Number	Revised Proposed Routes, Other Routes, and Route Variations	Segment Length in Miles	Acres of Habitat Impacted by Operation											
			Bald Eagle		Black-Tailed Prairie Dog		Burrowing Owl	Columbian Sharp-Tailed Grouse	Mountain Plover	Northern Goshawk	Northern Leopard Frog	Pygmy Rabbit	White-Tailed Prairie Dog	Wyoming Pocket Gopher
			Within a 1-mile Nest Buffer	Within a 1-mile Winter Roost Buffer	Colony	Complex <sup>1/</sup>				Within a 1-mile Nest Buffer				
8	Revised Proposed Route	129.7	4				191 [16]				3	188[16]		
	Proposed – Existing 500-kV Removal <sup>2/</sup>	1.1					t <sup>3/</sup>					t <sup>3/</sup>		
	Route 8G	146.9	4				261 [25]				1 [<1]	241 [23]		
	Route 8G – Existing 500-kV Removal	1.9												
	Route 8H	137.5	3				209 [77]				<1 [<1]	207 [76]		
9	Revised Proposed Route	165.3	4				288 [76]	3			<1 [<1]	277 [75]		
	Proposed – Existing 138-kV Removal <sup>2/</sup>	25.7												
	Segment 9 FEIS Proposed Route	162.2	4				291 [24]	3			2 [<1]	252 [22]		
	Route 9K	174.6	4				344 [23]	3			1 [<1]	316 [22]		
	Proposed – Comparison portion for Toana Road Variations 1/1-A	8.7					13					13		
	Toana Road Variation 1	8.5					12					12		
	Toana Road Variation 1-A	8.9					10					10		
8/9	Comparison portion for the Alternative 5 WWE Corridor and Alternative 5 Helicopter-assisted Construction Variations	66.1 <sup>4/</sup>	4				74 [2]				<1	60 [1]		
	Alternative 5 WWE Corridor Variation	62.2 <sup>5/</sup>	3				67 [12]				<1	45 [9]		
	Alternative 5 Helicopter-assisted Construction Variation	66.1 <sup>4/</sup>	3				46 [2]				t <sup>3/</sup>	36 [1]		

Notes: Acreages have been rounded to the nearest whole acre; therefore, numbers are inexact and columns/rows may not sum exactly

Blank cells indicate zero acres or null value

The numbers in square brackets "[ ]" correspond to impacts that would occur on BLM-managed lands within the SRBOP

<sup>1/</sup> The number of “colony” acres impacted represents colonies that are not part of complexes; the sum of the two numbers, “colonies” and “complexes,” adds up to total acres of prairie dog habitat impacted

<sup>2/</sup> Portions of the disturbance areas may overlap; therefore, actual effects may be less than presented

<sup>3/</sup> “t” indicates only a trace amount (<0.1 acre) of impact

<sup>4/</sup> This variation consists of approximately 32.9 miles of Route 8G and 33.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

<sup>5/</sup> This variation consists of approximately 31.0 miles of Route 8G and 31.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

Source: IDFG 2014, ReGAP 2016, Tetra Tech 2016

Table D.11-9. Number of Greater Sage-Grouse Leks within Specified Distances from Route Centerlines

Segment Number	Revised Proposed Routes, Other Routes, and Route Variations	Segment Length in Miles	Buffer Distance and Active Status													
			0.25-mile Buffer		0.6-mile Buffer		1-mile Buffer		2-mile Buffer		3-mile Buffer		4-mile Buffer		11-mile Buffer	
			Occupied <sup>1/</sup>	Undetermined	Occupied <sup>1/</sup>	Undetermined	Occupied <sup>1/</sup>	Undetermined	Occupied <sup>1/</sup>	Undetermined	Occupied <sup>1/</sup>	Undetermined	Occupied <sup>1/</sup>	Undetermined	Occupied <sup>1/</sup>	Undetermined
8	Revised Proposed Route	129.7						1(1)		2(2)	1(1)	5(3)	1(1)	6(4)	24(21)	30(24)
	Proposed – Existing 500-kV Removal <sup>2/</sup>	1.1														
	Route 8G	146.9				1(1)		2(2)		2(2)	2(2)	4(4)	4(4)	5(5)	25(21)	27(26)
	Route 8G – Existing 500-kV Removal	1.9														
	Route 8H	137.5											2(2)		8(8)	14(13)
	Route 8H – Existing 138-kV Removal	25.7														1(1)
	Route 8H – Existing 500-kV Removal	1.9														
9	Revised Proposed Route	165.3							1(1)	1(1)	3(2)	1(1)	13(10)	3(3)	52(46)	52(51)
	Proposed – Existing 138-kV Removal <sup>2/</sup>	25.7														1(1)
	Segment 9 FEIS Proposed Route	162.2				1(1)		1(1)	1(1)	2(2)	3(2)	4(4)	13(10)	7(7)	59(50)	62(61)
	Route 9K	174.6				1(1)		2(2)	1(1)	3(3)	5(4)	5(5)	15(12)	8(8)	69(59)	65(64)
	Proposed – Comparison portion for Toana Road Variations 1/1-A	8.7									1(1)		3(3)	1(1)	7(6)	11(10)
	Toana Road Variation 1	8.5							1(1)	1(1)	3(3)	2(2)	3(3)	2(2)	8(7)	11(10)
	Toana Road Variation 1-A	8.9							1(1)	1(1)	3(3)	2(2)	3(3)	2(2)	8(7)	11(10)
8/9	Comparison portion for the Alternative 5 WWE Corridor and Alternative 5 Helicopter-assisted Construction Variations	66.1 <sup>3/</sup>				1(1)		2(2)		2(2)	2(2)	4(4)	4(4)	5(5)	19(16)	18(18)
	Alternative 5 WWE Corridor Variation	62.2 <sup>4/</sup>						1(1)		1(1)		3(3)	2(2)	4(4)	19(16)	18(18)
	Alternative 5 Helicopter-assisted Construction Variation	66.1 <sup>3/</sup>				1(1)		2(2)		2(2)	2(2)	4(4)	4(4)	5(5)	19(16)	18(18)

Notes: The numbers in parentheses indicate the number of leks located on federally managed lands (e.g., a “4(2)” value indicates there are 4 leks within the buffer distance, 2 of which are located on federally managed lands)

<sup>1/</sup> Refers to leks that have been defined as occupied in Idaho

<sup>2/</sup> Portions of the disturbance areas may overlap; therefore, actual effects may be less than presented

<sup>3/</sup> This variation consists of approximately 32.9 miles of Route 8G and 33.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

<sup>4/</sup> This variation consists of approximately 31.0 miles of Route 8G and 31.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

Source: IDFG 2014, Tetra Tech 2016

Table D.11-10. Number of Columbian Sharp-Tailed Grouse Leks within Specified Distances from Route Centerlines

Segment Number	Revised Proposed Routes, Other Routes, and Route Variations	Segment Length (Miles)	Buffer Distance and Active Status					
			0.25-mile Buffer		0.6-mile Buffer		2-mile Buffer	
			Occupied <sup>1/</sup>	Undetermined	Occupied <sup>1/</sup>	Undetermined	Occupied <sup>1/</sup>	Undetermined
8	Revised Proposed Route	129.7						
	Proposed – Existing 500-kV Removal <sup>2/</sup>	1.1						
	Route 8G	146.9						
	Route 8G – Existing 500-kV Removal	1.9						
	Route 8H	137.5						
	Route 8H – Existing 138-kV Removal	25.7						
	Route 8H – Existing 500-kV Removal	1.9						
9	Revised Proposed Route	165.3						
	Proposed – Existing 138-kV Removal <sup>2/</sup>	25.7						
	Segment 9 FEIS Proposed Route	162.2						
	Route 9K	174.6						
	Proposed – Comparison portion for Toana Road Variations 1/1-A	8.7						
	Toana Road Variation 1	8.5						
	Toana Road Variation 1-A	8.9						
8/9	Comparison portion for the Alternative 5 WWE Corridor and Alternative 5 Helicopter-assisted Construction Variations	66.1 <sup>3/</sup>						
	Alternative 5 WWE Corridor Variation	62.2 <sup>4/</sup>						
	Alternative 5 Helicopter-assisted Construction Variation	66.1 <sup>3/</sup>						

Notes: This table contains no data because there were no leks found within these buffer distances

<sup>1/</sup> Refers to leks that have been defined as occupied in Idaho

<sup>2/</sup> Portions of the disturbance areas may overlap; therefore, actual effects may be less than presented

<sup>3/</sup> This variation consists of approximately 32.9 miles of Route 8G and 33.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

<sup>4/</sup> This variation consists of approximately 31.0 miles of Route 8G and 31.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

Source: IDFG 2014

Table D.11-11. Miles of Agency Designated Greater Sage-Grouse Habitat Crossed by the Route Centerlines

Segment Number	Revised Proposed Routes, Other Routes, and Route Variations	Segment Length in Miles	Core Areas	Key Areas	R1 Habitats	R2 Habitats	R3 Habitats	Preliminary Priority Habitats (PPH)	Preliminary General Habitats (PGH)	Priority Habitat Management Areas (PHMA)	General Habitat Management Areas (GHMA)	Important Habitat Management Areas (IHMA)	Sagebrush Focal Areas (SFA)
8	Revised Proposed Route	129.7		6.4 [2.0]	28.2	11.8		6.6	21.1 [2.0]		53.1 [2.0]	3.7	
	Proposed – Existing 500-kV Removal <sup>1/</sup>	1.1											
	Route 8G	146.9		4.7	21.8	10.4		4.7	32.6		21.8	22.5	
	Route 8G – Existing 500-kV Removal	1.9											
	Route 8H	137.5			16.4				23.8 [0.1]		16.4	9.7 [1.1]	
	Route 8H – Existing 138-kV Removal	25.7											
	Route 8H – Existing 500-kV Removal	1.9											
9	Revised Proposed Route	165.3		8.2	16.8	0.3		16.0	25.4 [0.1]		3.5	15.7 [1.1]	
	Proposed – Existing 138-kV Removal <sup>1/</sup>	25.7											
	Segment 9 FEIS Proposed Route	162.2		8.2	16.8	0.3		16.0	25.8 [0.4]		11.8 [2.5]	22.3 [0.8]	
	Route 9K	174.6		12.9	22.2	13.0		20.8	34.3		8.8	28.8	
	Proposed – Comparison portion for Toana Road Variations 1/1-A	8.7			6.0			7.3	1.4		3.5	1.4	
	Toana Road Variation 1	8.5			1.0			7.6	0.9		2.5	2.7	
	Toana Road Variation 1-A	8.9			1.0			7.6	1.2		2.7	2.6	
8/9	Comparison portion for the Alternative 5 WWE Corridor and Alternative 5 Helicopter-assisted Construction Variations	66.1 <sup>2/</sup>		9.4				9.4	22.9		8.4	45.1	
	Alternative 5 WWE Corridor Variation	62.2 <sup>3/</sup>							16.7 [0.7]		16.7 [4.9]	32.3 [1.7]	
	Alternative 5 Helicopter-assisted Construction Variation	66.1 <sup>2/</sup>		9.4				9.4	22.9		8.4	45.1	

Notes: Mileages have been rounded to the nearest tenth of a mile; therefore, numbers are inexact and columns/rows may not sum exactly

Blank cells indicate zero miles or null value

The numbers in square brackets "[ ]" correspond to impacts that would occur on BLM-managed lands within the SRBOP

<sup>1/</sup> Portions of the disturbance areas may overlap; therefore, actual effects may be less than presented

<sup>2/</sup> This variation consists of approximately 32.9 miles of Route 8G and 33.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

<sup>3/</sup> This variation consists of approximately 31.0 miles of Route 8G and 31.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

Source: BLM 2012d, 2013e, 2014d, 2015b



Table D.11-12.      *(This table has been removed as it is not relevant to the Supplemental Environmental Impact Statement)*

Table D.11-13.      *(This table has been removed as it is not relevant to the Supplemental Environmental Impact Statement)*

Table D.11-14. Acres of Construction Impacts to Agency Designated Greater Sage-Grouse Habitat

Segment Number	Revised Proposed Routes, Other Routes, and Route Variations	Segment Length in Miles	Core Areas Crossed	Key Areas Crossed	R1 Habitats Crossed	R2 Habitats Crossed	R3 Habitats Crossed	Preliminary Priority Habitats (PPH)	Preliminary General Habitats (PGH)	Priority Habitat Management Areas (PHMA)	General Habitat Management Areas (GHMA)	Important Habitat Management Areas (IHMA)	Sagebrush Focal Areas (SFA)
8	Revised Proposed Route	129.7		110 [26]	509	196 [t <sup>2/</sup> ]		129	380 [26]		889 [26]	70	
	Proposed – Existing 500-kV Removal <sup>1/</sup>	1.1											
	Route 8G	146.9		103 [4]	356	204		103 [5]	563 [t <sup>2/</sup> ]		350 [9]	457 [1]	
	Route 8G – Existing 500-kV Removal	1.9											
	Route 8H	137.5			248	1			396 [9]		248	196 [40]	
	Route 8H – Existing 138-kV Removal	25.7											
	Route 8H – Existing 500-kV Removal	1.9											
9	Revised Proposed Route	165.3		177	326	10		282	509 [9]		62	304 [40]	
	Proposed – Existing 138-kV Removal <sup>1/</sup>	25.7											
	Segment 9 FEIS Proposed Route	162.2		162	300	11		292	507 [3]		218 [59]	449 [24]	
	Route 9K	174.6		281 [4]	434	233		386 [4]	673		162 [7]	565 [1]	
	Proposed – Comparison portion for Toana Road Variations 1/1-A	8.7			109			124	36		62	29	
	Toana Road Variation 1	8.5			24			126	27		27	55	
	Toana Road Variation 1-A	8.9			12			129	19		34	52	
8/9	Comparison portion for the Alternative 5 WWE Corridor and Alternative 5 Helicopter-assisted Construction Variations	66.1 <sup>3/</sup>		171 [4]				171 [5]	361 [t <sup>2/</sup> ]		131 [9]	758 [1]	
	Alternative 5 WWE Corridor Variation	62.2 <sup>4/</sup>		1 [1]				1 [1]	285 [6]		265 [91]	614 [40]	
	Alternative 5 Helicopter-assisted Construction Variation	66.1 <sup>3/</sup>		146 [4]				146 [4]	338 [t <sup>2/</sup> ]		105 [9]	650 [1]	

Notes: Acreages have been rounded to the nearest whole acre; therefore, numbers are inexact and columns/rows may not sum exactly

Blank cells indicate zero acres or null value

The numbers in square brackets "[ ]" correspond to impacts that would occur on BLM-managed lands within the SRBOP

<sup>1/</sup> Portions of the disturbance areas may overlap; therefore, actual effects may be less than presented

<sup>2/</sup> "t" indicates only a trace amount (<0.1 acre) of impact

<sup>3/</sup> This variation consists of approximately 32.9 miles of Route 8G and 33.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

<sup>4/</sup> This variation consists of approximately 31.0 miles of Route 8G and 31.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

Source: IDFG 2012, 2013; BLM 2014, 2015; Tetra Tech 2016

Table D.11-15. Acres of Operations Impacts to Agency Designated Greater Sage-Grouse Habitat

Segment Number	Revised Proposed Routes, Other Routes, and Route Variations	Segment Length in Miles	Core Areas Crossed	Key Areas Crossed	R1 Habitats Crossed	R2 Habitats Crossed	R3 Habitats Crossed	Preliminary Priority Habitats (PPH)	Preliminary General Habitats (PGH)	Priority Habitat Management Areas (PHMA)	General Habitat Management Areas (GHMA)	Important Habitat Management Areas (IHMA)	Sagebrush Focal Areas (SFA)
8	Revised Proposed Route	129.7		11 [3]	60	18 [t <sup>2/</sup> ]		12	45 [3]		96 [3]	7	
	Proposed – Existing 500-kV Removal <sup>1/</sup>	1.1											
	Route 8G	146.9		13 [1]	45	25		13 [1]	69		42 [2]	57 [t <sup>2/</sup> ]	
	Route 8G – Existing 500-kV Removal	1.9											
	Route 8H	137.5			29	<1			46 [<1]		29	25 [5]	
9	Revised Proposed Route	165.3		22	42	1		29	71 [<1]		5	41 [5]	
	Proposed – Existing 138-kV Removal <sup>1/</sup>	25.7											
	Segment 9 FEIS Proposed Route	162.2		22	37	1		29	66 [<1]		21 [4]	49 [3]	
	Route 9K	174.6		35 [1]	59	26		42 [1]	93		18 [2]	73 [t <sup>2/</sup> ]	
	Proposed – Comparison portion for Toana Road Variations 1/1-A	8.7			9			13	3		5	4	
	Toana Road Variation 1	8.5			2			14	2		3	5	
	Toana Road Variation 1-A	8.9			1			9	2		2	5	
8/9	Comparison portion for the Alternative 5 WWE Corridor and Alternative 5 Helicopter-assisted Construction Variations	66.1 <sup>3/</sup>		15 [1]				15 [1]	29		13 [2]	67 [<1]	
	Alternative 5 WWE Corridor Variation	62.2 <sup>4/</sup>		<1 [<1]				<1 [<1]	21 [1]		20 [7]	49 [5]	
	Alternative 5 Helicopter-assisted Construction Variation	66.1 <sup>3/</sup>		11 [1]				11 [1]	19		8 [2]	48 [<1]	

Notes: Acreages have been rounded to the nearest whole acre; therefore, numbers are inexact and columns/rows may not sum exactly

Blank cells indicate zero acres or null value

The numbers in square brackets "[ ]" correspond to impacts that would occur on BLM-managed lands within the SRBOP

<sup>1/</sup> Portions of the disturbance areas may overlap; therefore, actual effects may be less than presented

<sup>2/</sup> "t" indicates only a trace amount (<0.1 acre) of impact

<sup>3/</sup> This variation consists of approximately 32.9 miles of Route 8G and 33.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

<sup>4/</sup> This variation consists of approximately 31.0 miles of Route 8G and 31.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

Source: IDFG 2012, 2013; BLM 2014, 2015; Tetra Tech 2016

**Table D.11-16.** Sightlines from Occupied and Undetermined Sage-Grouse Leks on Federally Managed Lands that are Located within 4 miles of Construction Sites Proposed on Federally Managed Lands

Lek ID	Agency	Management Status	Route Associated with Closest Disturbance or Centerline	Distance to Closest Disturbance or Project Centerline (miles)	Visible Distance (sightline) from Lek Toward Project (miles)	Distance to Existing Features Crossing Sightline (miles) <sup>1/</sup>	Distance to Closest Existing Features that do Not Cross Sightline (miles) <sup>2/</sup>	Other Routes within 4 miles
2O164	BLM	Undetermined	Toana Road Variation 1	1.93	0.87			Route 9K,Segment 9 Proposed,Segment 9 Proposed and Route 9K - Comparison portion for Toana Road Variations 1/1-A,Toana Road Variation 1-A, Segment 9 FEIS Proposed Route
2O278	BLM	Undetermined	Segment 9 FEIS Proposed Route	0.37	0.10			Route 8G,Route 9K,Segment 9 Proposed,Segment 9 Proposed - Existing 138-kV Removal
2O441	BLM	Undetermined	Route 8G	2.78	0.32	2.53	0.22	Route 9K,Segment 9 Proposed, Segment 9 FEIS Proposed Route
2O442	BLM	Undetermined	Route 8G	2.90	0.07	1.99	0.36	Route 9K, Segment 9 FEIS Proposed Route
2O482	BLM	Undetermined	Route 8G	0.63	0.17		0.05	Route 9K
2O504	BLM	Occupied	Route 8G	3.74	0.11	1.34	0.55	Route 9K
2O506	BLM	Undetermined	Route 9K	2.46	0.02	0.51	0.36	Route 9K,Segment 9 Proposed
2O507	BLM	Occupied	Route 8G	3.74	0.34	1.26	0.39	Route 9K
2O508	BLM	Unoccupied	Route 8G	0.63	0.35		0.15	Route 9K,Segment 9 Proposed, Segment 9 FEIS Proposed Route
2O618	BLM	Occupied	Route 8G	1.93	0.15		0.37	Route 9K,Segment 8 Proposed,Segment 9 Proposed, Segment 9 FEIS Proposed Route, Route 8H
2O629	BLM	Undetermined	Route 8G	0.47	0.05	0.03		Route 9K,Segment 9 Proposed, Segment 9 FEIS Proposed Route
2O641	BLM	Occupied	Route 8G	1.96	0.09		0.23	Route 9K,Segment 8 Proposed,Segment 9 Proposed, Segment 9 FEIS Proposed Route, Route 8H
2T010	BLM	Undetermined	Route 9K	2.68	0.41	0.6	0.34	Segment 9 Proposed,Segment 9 Proposed and Route 9K - Comparison portion for Toana Road Variations 1/1-A,Toana Road Variation 1,Toana Road Variation 1-A, Segment 9 FEIS Proposed Route
2T014	BLM	Occupied	Route 9K	2.77	1.15	0.08	0.03	Segment 9 Proposed,Segment 9 Proposed and Route 9K - Comparison portion for Toana Road Variations 1/1-A,Toana Road Variation 1,Toana Road Variation 1-A, Segment 9 FEIS Proposed Route
2T016	BLM	Occupied	Route 9K	3.18	0.38	1.89	0.08	Segment 9 Proposed, Segment 9 FEIS Proposed Route
2T064	BLM	Occupied	Route 9K	3.18	0.07	0.3	0.25	Segment 9 Proposed, Segment 9 FEIS Proposed Route
2T112	BLM	Unoccupied	Route 9K	2.52	0.53	0.28	0.17	Segment 9 Proposed, Segment 9 FEIS Proposed Route
2T138	BLM	Undetermined	Toana Road Variation 1	1.05	0.32	0.15	0.04	Segment 9 Proposed,Segment 9 Proposed and Route 9K - Comparison portion for Toana Road Variations 1/1-A,Toana Road Variation 1,Toana Road Variation 1-A, Segment 9 FEIS Proposed Route
2T149	BLM	Occupied	Route 9K	1.53	0.39		0.21	Segment 9 Proposed,Segment 9 Proposed and Route 9K - Comparison portion for Toana Road Variations 1/1-A,Toana Road Variation 1,Toana Road Variation 1-A, Segment 9 FEIS Proposed Route
2T151	BLM	Occupied	Toana Road Variation 1	0.87	0.14	0.2		Segment 9 Proposed,Segment 9 Proposed and Route 9K - Comparison portion for Toana Road Variations 1/1-A,Toana Road Variation 1,Toana Road Variation 1-A, Segment 9 FEIS Proposed Route
2T152	BLM	Occupied	Toana Road Variation 1	1.89	0.81	1.47	0.13	Segment 9 Proposed,Segment 9 Proposed and Route 9K - Comparison portion for Toana Road Variations 1/1-A,Toana Road Variation 1,Toana Road Variation 1-A, Segment 9 FEIS Proposed Route
2T156	BLM	Occupied	Route 9K	3.67	0.79	0.64	0.15	Segment 9 Proposed, Segment 9 FEIS Proposed Route
4C133	BLM	Undetermined	Route 9K	1.95	0.05		0.4	Route 8G,Segment 8 Proposed,Segment 9 Proposed
E013	BLM	Undetermined	Segment 8 Proposed	0.83	0.31	0.75	0.1	Route 8G,Route 9K,Segment 9 Proposed
E015	BLM	Not verified	Segment 8 Proposed	3.84	0.02	0.46	0.3	
E016	BLM	Not verified	Segment 8 Proposed	2.85	0.14	2.63	0.48	
E018	BLM	Undetermined	Segment 8 Proposed	3.19	0.28	1.2	0.17	
E019	BLM	Not verified	Segment 8 Proposed	2.33	0.23	0.16		
E020	BLM	Undetermined	Segment 8 Proposed	2.36	0.33	2.12	0.04	
E021	BLM	Undetermined	Segment 8 Proposed	1.72	0.42	1.22	0.44	
E022	BLM	Undetermined	Segment 8 Proposed	3.78	0.51	1.29	0.30	
E050	BLM	Unoccupied	Segment 8 Proposed	2.21	0.28	1.98	0.18	
E051	BLM	Unoccupied	Segment 8 Proposed	2.97	0.52	0.45	0.1	
E071	BLM	Occupied	Segment 8 Proposed	2.90	0.29	1.11	0.42	

**Table D.11-16.** Sightlines from Occupied and Undetermined Sage-Grouse Leks on Federally Managed Lands that are Located within 4 miles of Construction Sites Proposed on Federally Managed Lands cont.

Lek ID	Agency	Management Status	Route Associated with Closest Disturbance or Centerline	Distance to Closest Disturbance or Project Centerline (miles)	Visible Distance (sightline) from Lek Toward Project (miles)	Distance to Existing Features Crossing Sightline (miles) <sup>1/</sup>	Distance to Closest Existing Features that do Not Cross Sightline (miles) <sup>2/</sup>	Other Routes within 4 miles
2O278	BLM	Undetermined	Alternative 5 WWE Corridor Variation	0.85	0.14			Alternative 5 Helicopter-Assisted Construction Variation
2O441	BLM	Undetermined	Alternative 5 Helicopter-Assisted Construction Variation	2.78	0.32	2.53	0.22	Alternative 5 WWE Corridor Variation
2O442	BLM	Undetermined	Alternative 5 Helicopter-Assisted Construction Variation	2.90	0.07	1.99	0.36	Alternative 5 WWE Corridor Variation
2O504	BLM	Occupied	Alternative 5 Helicopter-Assisted Construction Variation	3.74	0.11	1.34	0.55	Alternative 5 WWE Corridor Variation
2O506	BLM	Undetermined	Alternative 5 Helicopter-Assisted Construction Variation	2.38	0.02	0.51	0.36	Alternative 5 WWE Corridor Variation
2O507	BLM	Occupied	Alternative 5 Helicopter-Assisted Construction Variation	3.74	0.34	1.26	0.39	Alternative 5 WWE Corridor Variation
2O508	BLM	Unoccupied	Alternative 5 Helicopter-Assisted Construction Variation	0.63	0.35		0.15	Alternative 5 WWE Corridor Variation
2O618	BLM	Occupied	Alternative 5 Helicopter-Assisted Construction Variation	1.93	0.15		0.37	Alternative 5 WWE Corridor Variation
2O629	BLM	Undetermined	Alternative 5 Helicopter-Assisted Construction Variation	0.47	0.05	0.03		Alternative 5 WWE Corridor Variation
2O641	BLM	Occupied	Alternative 5 Helicopter-Assisted Construction Variation	1.96	0.09		0.23	Alternative 5 WWE Corridor Variation

Notes: Blank cells indicate zero miles or null value

<sup>1/</sup> Distance to existing disturbances (i.e., highways or existing powerlines) that occur between the lek and the proposed Project

<sup>2/</sup> Distance to existing disturbances (i.e., highways or existing powerlines) that occur near the lek, but are not located between the lek and the proposed Project (e.g., disturbances that occur adjacent to or behind the lek, in relation to the Project)

**Table D.11-17.** Number of Greater Sage-Grouse Leks within Specified Distances from the Seven Action Alternatives

Alternative	Buffer Distance and Active Status													
	0.25-mile Buffer		0.6-mile Buffer		1-mile Buffer		2-mile Buffer		3-mile Buffer		4-mile Buffer		11-mile Buffer	
	Occupied <sup>1/</sup>	Undetermined	Occupied <sup>1/</sup>	Undetermined	Occupied <sup>1/</sup>	Undetermined	Occupied <sup>1/</sup>	Undetermined	Occupied <sup>1/</sup>	Undetermined	Occupied <sup>1/</sup>	Undetermined	Occupied <sup>1/</sup>	Undetermined
Alternative 1						1(1)	1(1)	3(3)	4(3)	6(4)	14(11)	9(7)	65(56)	77(70)
Alternative 2				1(1)		2(2)	1(1)	4(4)	4(3)	9(7)	14(11)	13(11)	77(65)	89(82)
Alternative 3				1(1)		3(3)	1(1)	5(5)	6(5)	10(8)	16(13)	14(12)	82(69)	90(83)
Alternative 4				2(2)		2(2)	1(1)	3(3)	5(4)	5(5)	15(12)	8(8)	64(54)	69(67)
Alternative 5				1(1)		2(2)	1(1)	3(3)	5(4)	5(5)	15(12)	8(8)	64(54)	69(67)
Alternative 6				1(1)		1(1)	1(1)	2(2)	3(2)	4(4)	13(10)	7(7)	59(50)	68(66)
Alternative 7				1(1)		2(2)	1(1)	3(3)	5(4)	5(5)	15(12)	8(8)	64(54)	69(67)

Notes: The numbers in parentheses indicate the number of leks located on federally managed lands (e.g., a “4(2)” value indicates there are 4 leks within the buffer distance, 2 of which are located on federally managed lands)

<sup>1/</sup> Refers to leks that have been defined as occupied in Idaho

Table D.12-1.        (This table has been removed as it is not relevant to the Supplemental Environmental Impact Statement)



**Table D.13-1. Paleontological Sensitivity Rankings for Revised Proposed Routes, Other Routes, and Route Variations**

Segment Number	Revised Proposed Routes, Other Routes, and Route Variations	Segment Length (miles)	Formation Name	Miles Crossed	PFYC
8	Revised Proposed Route	129.7	Quaternary Undifferentiated (alluvium, gravel, fluvial, landslide)	39.8	3 <sup>1/</sup>
			Bruneau Formation - basalt	23.7	4A
			Snake River Basalt	9.5	1 <sup>2/</sup>
			Bruneau Formation lake sediments	5.5	4A
			Glenns Ferry Formation	15.7	5A
			Locally named Quaternary/Tertiary basalt flows	32.5	1 <sup>2/</sup>
			Idaho Group sediments (fluvial, lacustrine, eolian)	0.8	3/
			Poision Creek/Chalk Hills undifferentiated	2.0	5A
			<b>Paleontological Sensitivity Ranking</b>	<b>366.7</b>	
	Revised Proposed – Existing 500-kV Removal	1.1	Quaternary Undifferentiated	1.1	3 <sup>1/</sup>
			<b>Paleontological Sensitivity Ranking</b>	<b>3.0</b>	
	Route 8G	146.9	Quaternary Undifferentiated (alluvium, gravel, fluvial, landslide)	19.7	3 <sup>1/</sup>
			Bruneau Formation - basalt	0.3	4A
			Idavada volcanics	4.6	3A <sup>5/</sup>
			Bruneau Formation lake sediments	16.2	4A
			Glenns Ferry Formation	45.3	5A
			Locally named Quaternary/Tertiary basalt flows	31.7	1 <sup>2/</sup>
			Idaho Group sediments (fluvial, lacustrine, eolian)	10.6	3/
			Poision Creek/Chalk Hills undifferentiated	18.4	5A
			<b>Paleontological Sensitivity Ranking</b>	<b>489.9</b>	
	Route 8G – Existing 500-kV Removal	1.9	Glenns Ferry Formation	0.7	5A
			Tuana Gravel	1.2	3A
			<b>Paleontological Sensitivity Ranking</b>	<b>6.5</b>	
	Route 8H	137.5	Quaternary undifferentiated (alluvial fan, gravel, loess)	16.1	3 <sup>1/</sup>
			Basalt (Idaho Group, Glenns Ferry, Snake River, locally named)	55.0	1 <sup>2/</sup>
			Bruneau Formation (basalt or sediments)	33.6	4A
			Pleistocene sediments/Melon Gravel	1.6	3A
			Idaho Group-Glenns Ferry, Chalk Hills, Poison Creek	28.5	5A
			Chalky Volcanic field	0.5	5A
			Teapot Volcanic Field, Rhyolite flows of Reynolds Creek, undefined	2.2	3/
			<b>Paleontological Sensitivity Ranking</b>	<b>387.5</b>	
	Route 8H – Existing 138-kV Removal	25.7	Quaternary Alluvium	0.1	3 <sup>1/</sup>
			Bruneau Formation (basalt or sediments)	4.2	4A
			Basalt (Idaho Group, Glenns Ferry, Snake River, locally named)	13.8	1 <sup>2/</sup>
			Idaho Group-Glenns Ferry Formation	7.6	5A
			<b>Paleontological Sensitivity Ranking</b>	<b>68.9</b>	
	Route 8H – Existing 500-kV Removal	1.9	Tuana Gravel	1.2	3A
			Idaho Group - Glenns Ferry Fm - Lake Stream Sediments	0.7	5A
			<b>Paleontological Sensitivity Ranking</b>	<b>7.1</b>	

**Table D.13-1.** Paleontological Sensitivity Rankings for Revised Proposed Routes, Other Routes, and Route Variation cont.

Segment Number	Revised Proposed Routes, Other Routes, and Route Variations	Segment Length (miles)	Formation Name	Miles Crossed	PFYC
9	Revised Proposed Route	165.3	Quaternary alluvium	5.6	3 <sup>1/</sup>
			Bruneau Formation - basalt	10.7	4A
			Bruneau Formation lake sediments	30.4	4A
			Quaternary Crowsnest Gravels	0.6	3 <sup>1/</sup>
			Idaho Group-Black Mesa Gravel	5.3	3A
			Tuana Gravel	10.0	3A
			Glenns Ferry Formation	20.4	5A
			Idaho Group sediments (fluvial, lacustrine, eolian)	0.2	3 <sup>/</sup>
			Idavada volcanics	14.4	3A <sup>5/</sup>
			Snake River Basalt	24.7	1 <sup>2/</sup>
			Locally named Quaternary/Tertiary basalt flows	36.6	1 <sup>2/</sup>
			Poison Creek and Chalk Hill Formations, undivided	5.9	5A
			Snake River Rhyolite	0.4	1 <sup>2/</sup>
			Paleontological Sensitivity Ranking	465.3	
	Revised Proposed – Existing 138-kV Removal	25.7	Quaternary alluvium	2.3	3 <sup>1/</sup>
			Bruneau Formation - basalt	0.2	4A
			Bruneau Formation lake sediments	4.6	4A
			Glenns Ferry Formation	0.6	5A
			Snake River Basalt	18.1	1 <sup>2/</sup>
			Paleontological Sensitivity Ranking	47.2	
	Segment 9 FEIS Proposed Route	162.2	Quaternary alluvium	15.4	3 <sup>1/</sup>
			Bruneau Formation-basalt	0.3	4A
			Bruneau Formation lake sediments	23.2	4A
			Quaternary Crowsnest Gravels	0.6	3 <sup>1/</sup>
			Idaho Group-Black Mesa Gravel	5.5	3A
			Bruneau Formation	3.0	4A
			Tuana Gravel	9.7	3A
			Glenns Ferry Formation	43.7	5A
			Banbury Basalt	30.6	1 <sup>2/</sup>
			Chalk Hills Formation	0.7	5A
			Chalky Volcanic field	0.6	5A <sup>4/</sup>
			Idavada Volcanics	14.3	3A <sup>5/</sup>
			Snake River Basalt	8.2	1 <sup>2/</sup>
			Poison Creek/Chalk Hills, undifferentiated	6.1	5A
			Snake River Rhyolite	0.4	1 <sup>2/</sup>
			Paleontological Sensitivity Ranking	537.2	

Table D.13-1. Paleontological Sensitivity Rankings for Revised Proposed Routes, Other Routes, and Route Variation cont.

Segment Number	Revised Proposed Routes, Other Routes, and Route Variations	Segment Length (miles)	Formation Name	Miles Crossed	PFYC
9	Route 9K	174.6	Quaternary alluvium	11.7	3 <sup>1/</sup>
			Bruneau Formation - basalt	0.3	4A
			Bruneau Formation lake sediments	15.6	4A
			Idaho Group-Black Mesa Gravel	10.1	3A
			Tuana Gravel	10.1	3A
			Quaternary Crowsnest Gravels	0.6	3 <sup>1/</sup>
			Glenns Ferry Formation	49.8	5A
			Idavada volcanics	19.3	3A <sup>5/</sup>
			Locally named Quaternary/Tertiary basalt flows	38.4	1 <sup>2/</sup>
			Poison Creek and Chalk Hill Formations, undivided	18.3	5A
			Snake River Rhyolite	0.4	1 <sup>2/</sup>
			Paleontological Sensitivity Ranking	598.3	
	Proposed – Comparison Portion for Toana Road Variations 1/1-A	8.7	Tertiary Basalt	2.2	1 <sup>2/</sup>
			Idavada volcanics	6.4	3A <sup>5/</sup>
			Paleontological Sensitivity Ranking	21.4	
	Toana Road Variation 1	8.5	Tertiary Basalt	5.3	1 <sup>2/</sup>
			Idavada volcanics	3.2	3A <sup>5/</sup>
			Paleontological Sensitivity Ranking	14.9	
	Toana Road Variation 1-A	8.9	Tertiary Basalt	4.3	1 <sup>2/</sup>
			Idavada volcanics	4.6	3A <sup>5/</sup>
			Paleontological Sensitivity Ranking	18.1	
	Route 9K	174.6	Quaternary alluvium	11.7	3 <sup>1/</sup>
			Bruneau Formation - basalt	0.3	4A
			Bruneau Formation lake sediments	15.6	4A
			Idaho Group-Black Mesa Gravel	10.1	3A
			Tuana Gravel	10.1	3A
			Quaternary Crowsnest Gravels	0.6	3 <sup>1/</sup>
			Glenns Ferry Formation	49.8	5A
			Idavada volcanics	19.3	3A <sup>5/</sup>
			Locally named Quaternary/Tertiary basalt flows	38.4	1 <sup>2/</sup>
			Poison Creek and Chalk Hill Formations, undivided	18.3	5A
			Snake River Rhyolite	0.4	1 <sup>2/</sup>
			Paleontological Sensitivity Ranking	598.3	

**Table D.13-1.** Paleontological Sensitivity Rankings for Revised Proposed Routes, Other Routes, and Route Variation cont.

Segment Number	Revised Proposed Routes, Other Routes, and Route Variations	Segment Length (miles)	Formation Name	Miles Crossed	PFYC
8/9	Comparison portion for the Alternative 5 WWE Corridor and Alternative 5 Helicopter-assisted Construction Variations	66.1 <sup>7/</sup>	Murphy area Basalt	1.2	1 <sup>2/</sup>
			Chalk Hills And Poison Creek Basalt flows	0.3	5A
			Idaho Group - Chalk Hills Formation	1.5	5A
			Chalky Volcanic field	1.1	5A <sup>4/</sup>
			Fossil Butte volcanic complex	0.2	3 <sup>6/</sup>
			Idaho Group - Glenns Ferry Formation	14.9	5A
			Idaho Group - Chalk Hills/Poison Creek Formations	11.1	5A
			Quaternary Alluvium	3.3	3 <sup>1/</sup>
			Quaternary/Tertiary Gravels	18.1	3 <sup>6/</sup>
			Snake River Basalt	13.8	1 <sup>2/</sup>
			Snake River Rhyolite	0.8	1 <sup>2/</sup>
			Paleontological Sensitivity Ranking	225.1	
	Alternative 5 WWE Corridor Variation	62.2 <sup>8/</sup>	Sinker Creek Basalt	0.9	1 <sup>2/</sup>
			Idaho Group - Chalk Hills Formation	1.4	5A
			Chalky Volcanic field	1.1	5A <sup>4/</sup>
			Idaho Group - Glenns Ferry Formation	15.5	5A
			Idaho Group - Chalk Hills/Poison Creek Formations	12.0	5A
			Quaternary alluvium	3.3	3 <sup>1/</sup>
			Quaternary/Tertiary Gravels	11.6	3 <sup>1/</sup>
			Snake River Basalt	15.5	1 <sup>2/</sup>
			Snake River Rhyolite	0.8	1 <sup>2/</sup>
			Paleontological Sensitivity Ranking	211.9	
	Alternative 5 Helicopter Assisted Construction Variation	66.1 <sup>7/</sup>	Murphy area Basalt	1.2	1 <sup>2/</sup>
			Chalk Hills And Poison Creek Basalt flows	0.3	5A
			Idaho Group - Chalk Hills Formation	1.5	5A
			Chalky Volcanic field	1.1	5A <sup>4/</sup>
			Fossil Butte volcanic complex	0.2	3 <sup>6/</sup>
			Idaho Group - Glenns Ferry Formation	14.9	5A
			Idaho Group - Chalk Hills/Poison Creek Formations	11.1	5A
			Quaternary Alluvium	3.3	3 <sup>1/</sup>
			Quaternary/Tertiary Gravels	18.1	3 <sup>1/</sup>
			Snake River Basalt	13.8	1 <sup>2/</sup>
			Snake River Rhyolite	0.8	1 <sup>2/</sup>
			Paleontological Sensitivity Ranking	225.1	

Note: Mileages have been rounded to the nearest tenth of a mile; therefore, numbers are inexact and columns/rows may not sum exactly

PFYC = Potential Fossil Yield Classification

<sup>1/</sup> Quaternary sediments (alluvium, gravel, loess, landslides) were designated PFYC Class 3. They may have fit Class 2 (less than 10,000 years old). Idaho classes unconsolidated Pleistocene deposits as Class 3A.

<sup>2/</sup> Igneous, metamorphic, and PreCambrian rocks classified as PFYC Class 1 unless given a different formation-specific definition in Wyoming or Idaho.

<sup>3/</sup> PFYC rankings for this formation were not designated in Idaho PFYC codes, and not readily defined by PFYC criteria (BLM, IM 2008-009).

<sup>4/</sup> The Chalky Point locality was discussed in the Chalk Hills formation in Idaho PFYC literature. It is unknown if the Chalky volcanics is the same as Chalky Point. However, given similar nomenclature and proximity to Chalk Hills, the Chalky volcanics were assumed as Class 5A.

<sup>5/</sup> USGS includes the Idavada Volcanics as part of the Challis Volcanic Group, which is classed as Class 3A.

<sup>6/</sup> PFYC rankings for this formation were not designated in Idaho PFYC codes and are not readily defined by PFYC criteria (BLM< IM 2008-009).

<sup>7/</sup> This variation consists of approximately 32.9 miles of Route 8G and 33.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

<sup>8/</sup> This variation consists of approximately 31.0 miles of Route 8G and 31.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

Source: USGS 2005

Table D.14-1. OPS Earthquake Hazard for the Revised Proposed Routes, Other Routes, and Route Variations

Segment Number	Revised Proposed Routes, Other Routes, and Route Variations	Segment Length in Miles	Earthquake Zone Rank		
			Low < 70	Medium 70 to 84	High 85 to 100
8	Revised Proposed Route	129.7	129.7		
	Revised Proposed – Existing 500-kV Removal <sup>1/</sup>	1.1	1.1		
	Route 8G	146.9	146.9		
	Route 8G – Existing 500-kV Removal	1.9	1.9		
	Route 8H	137.5	137.5		
	Route 8H – Existing 138-kV Removal	25.7	25.7		
	Route 8H – Existing 500-kV Removal	1.9	1.9		
9	Revised Proposed Route	165.3	165.2		
	Revised Proposed – Existing 138-kV Removal <sup>1/</sup>	25.7	25.7		
	Segment 9 FEIS Proposed Route	162.2	162.2		
	Route 9K	174.6	174.6		
	Proposed – Compare to Toana Road Variation 1/1-A	8.7	8.7		
	Toana Road Variation 1	8.5	8.5		
	Toana Road Variation 1-A	8.9	8.9		
8/9	Comparison portion for the Alternative 5 WWE Corridor and Alternative 5 Helicopter-assisted Construction Variations	66.1 <sup>2/</sup>	66.1		
	Alternative 5 WWE Corridor Variation	62.2 <sup>3/</sup>	62.2		
	Alternative 5 Helicopter-assisted Construction Variation	66.1 <sup>2/</sup>	66.1		

Notes: Mileages have been rounded to the nearest tenth of a mile; therefore, numbers are inexact and columns/rows may not sum exactly

Blank cells indicate zero miles or null value

<sup>1/</sup> Portions of the disturbance areas may overlap; therefore, actual effects may be less than presented

<sup>2/</sup> This variation consists of approximately 32.9 miles of Route 8G and 33.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

<sup>3/</sup> This variation consists of approximately 31.0 miles of Route 8G and 31.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

Source: NPMS 1996

Table D.14-2. Affected Miles by Earthquake Magnitude Buffers

Segment Number	Revised Proposed Routes, Other Routes, and Route Variations	Segment Length in Miles	Buffered Mileage		
			Magnitude 0.1 to 6	Magnitude 6.0 to 6.9	Magnitude >7
8	Revised Proposed Route	129.7	109.3		60.7
	Proposed - Existing 500-kV Removal <sup>1/</sup>	1.1	1.1		
	Route 8G	146.9	51.2		41.2
	Route 8G – Existing 500-kV Removal	1.9			1.9
	Route 8H	137.5	44.3	39.4	
	Route 8H – Existing 138-kV Removal	25.7			
	Route 8H – Existing 500-kV Removal	1.9		1.9	
9	Revised Proposed Route	165.3	21.6		
	Proposed - Existing 138-kV Removal <sup>1/</sup>	25.7			
	Segment 9 FEIS Proposed Route	162.2	26.7		
	Route 9K	174.6	28.5		
	Proposed – Comparison portion for Toana Road Variations 1/1-A	8.7			
	Toana Road Variation 1	8.5			
	Toana Road Variation 1-A	8.9			
8/9	Comparison portion for the Alternative 5 WWE Corridor and Alternative 5 Helicopter-assisted Construction Variations	66.1 <sup>2/</sup>	55.5		
	Alternative 5 WWE Corridor Variation	62.2 <sup>3/</sup>	53.1		
	Alternative 5 Helicopter-assisted Construction Variation	66.1 <sup>2/</sup>	55.5		

Notes: Mileages have been rounded to the nearest tenth of a mile; therefore, numbers are inexact and columns/rows may not sum exactly

Blank cells indicate zero miles or null value

<sup>1/</sup> Portions of the disturbance areas may overlap; therefore, actual effects may be less than presented

<sup>2/</sup> This variation consists of approximately 32.9 miles of Route 8G and 33.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

<sup>3/</sup> This variation consists of approximately 31.0 miles of Route 8G and 31.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

Source: DOGAMI 2002, USGS 2014b, IGS 2007, Esri 2006, NGDC/WDS 1985

**Table D.14-3.** Miles of Landslide Hazard Ranking Crossed by Revised Proposed Routes, Other Routes, and Route Variations

Segment Number	Revised Proposed Routes, Other Routes, and Route Variations	Segment Length in Miles	Buffered Mileage		
			Low Risk <70	Medium Risk 70-84	High Risk 85-100
8	Revised Proposed Route	129.7	121.9	7.8	
	Revised Proposed – Existing 500-kV Removal <sup>1/</sup>	1.1	1.1		
	Route 8G	146.9	146.9		
	Route 8G – Existing 500-kV Removal	1.9	1.9		
	Route 8H	137.5	137.5		
	Route 8H – Existing 138-kV Removal	25.7	25.7		
	Route 8H – Existing 500-kV Removal	1.9	1.9		
9	Revised Proposed Route	165.3	165.2		
	Revised Proposed – Existing 138-kV Removal <sup>1/</sup>	25.7	25.7		
	Segment 9 FEIS Proposed Route	162.2	162.2		
	Route 9K	174.6	174.6		
	Proposed – Compare to Toana Road Variations 1/1-A	8.7	8.7		
	Toana Road Variation 1	8.5	8.5		
	Toana Road Variation 1-A	8.9	8.9		
8/9	Comparison portion for the Alternative 5 WWE Corridor and Alternative 5 Helicopter-assisted Construction Variations	66.1 <sup>2/</sup>	66.1		
	Alternative 5 WWE Corridor Variation	62.2 <sup>3/</sup>	62.2		
	Alternative 5 Helicopter-assisted Constructino Variation	66.1 <sup>2/</sup>	66.1		

Notes: Mileages have been rounded to the nearest tenth of a mile; therefore, numbers are inexact and columns/rows may not sum exactly

Blank cells indicate zero miles or null value

<sup>1/</sup> Portions of the disturbance areas may overlap; therefore, actual effects may be less than presented

<sup>2/</sup> This variation consists of approximately 32.9 miles of Route 8G and 33.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

<sup>3/</sup> This variation consists of approximately 31.0 miles of Route 8G and 31.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

Source: NPMS 1996

Table D.14-4.        (This table has been removed as it is not relevant to the Supplemental Environmental Impact Statement)



Table D.14-5.        (This table has been removed as it is not relevant to the Supplemental Environmental Impact Statement)

Table D.14-6.        (This table has been removed as it is not relevant to the Supplemental Environmental Impact Statement)

Table D.14-7.        (This table has been removed as it is not relevant to the Supplemental Environmental Impact Statement)

**Table D.15-1.** Analysis of Soil Factors in Construction Disturbance Areas in Acres

Segment Number	Revised Proposed Routes, Other Routes, and Route Variations	Segment Length in Miles	Total Acres	Highly Wind Erodible	High K Factor	Slope > 25%	Low T Factor	Prime Farmland	Compaction Prone	Stony/ Rocky	Droughty Soil	Shallow Bedrock	Hydric Soil
8	Revised Proposed Route	129.7	2,271 [298]	682 [70]	1,621 [276]		1,809 [205]	533 [100]			1,412 [102]	738 [103]	
	Proposed – Existing 500-kV Removal <sup>1/</sup>	1.1	9		9 [3]							9 [3]	
	Route 8G	146.9	2,752 [180]	1,711 [170]	1,141 [10]		1,612 [30]	689 [149]		36	1,607 [170]	1,940 [179]	
	Route 8G – Existing 500-kV Removal	1.9	10		10								
	Route 8H	137.5	2,525 [1,006]	1,918 [964]	1,296 [620]		941 [352]	1,163 [845]		36	1,224 [384]	1,579 [809]	
	Route 8H – Existing 138-kV Removal	25.7	48	48 [38]	37 [31]		9 [6]	39 [33]			11 [7]	48 [38]	
	Route 8H – Existing 500-kV Removal	1.9	10		10								
9	Revised Proposed Route	165.3	3,149 [996]	1,513 [956]	1,924 [621]	39	1,592 [353]	1,531 [837]		490	1,258 [374]	1,825 [801]	
	Proposed – Existing 138-kV Removal <sup>1/</sup>	25.7	48	48 [38]	37 [32]		9 [6]	39 [33]			11 [7]	48 [38]	
	Segment 9 FEIS Proposed Route	162.2	3,294 [269]	1,486 [211]	1,510 [85]	33	2,131 [108]	1,024 [186]		534	1,812 [184]	1,972 [240]	
	Route 9K	174.6	3,383 [172]	1,317 [163]	1,767 [8]	39	2,260 [29]	964 [142]		490	1,651 [163]	2,192 [170]	
	Proposed – Comparison portion for Toana Road Variations 1/1-A	8.7	177		168		177			8	8	177	
	Toana Road Variation 1	8.5	168		165		168			2	2	168	
	Toana Road Variation 1-A	8.9	163		161		163			2	2	163	
8/9	Comparison portion for the Alternative 5 WWE Corridor and Alternative 5 Helicopter-assisted Construction Variations	66.1 <sup>2/</sup>	1,130 [17]	552	808 [17]		1,052 [17]	309		1	322	898 [17]	
	Alternative 5 WWE Corridor Variation	62.2 <sup>3/</sup>	1,112 [184]	599 [81]	815 [184]		1,031 [184]	383 [81]		1	297	808 [104]	
	Alternative 5 Helicopter-assisted Construction Variation	66.1 <sup>2/</sup>	1,027 [17]	493	740 [17]		926 [17]	309		1	287	818 [17]	

Notes: Acreages have been rounded to the nearest whole acre; therefore, numbers are inexact and columns/rows may not sum exactly

Blank cells indicate zero acres or null value

The numbers in square brackets "[ ]" correspond to impacts that would occur on BLM-managed lands in the SRBOP

<sup>1/</sup> Portions of the disturbance areas may overlap; therefore, actual effects may be less than presented<sup>2/</sup> This variation consists of approximately 32.9 miles of Route 8G and 33.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.<sup>3/</sup> This variation consists of approximately 31.0 miles of Route 8G and 31.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

Source: NRCS 2006

**Table D.15-2.** Analysis of Soil Factors in Operations Disturbance Areas in Acres

Segment Number	Revised Proposed Routes, Other Routes, and Route Variations	Segment Length in Miles	Total Acres	Erosion Factors			Sensitive Soils		Factors Affecting Reclamation					Permanent Soil Loss
				Highly Wind Erodible	High K Factor	Slope > 25%	Low T Factor	Prime Farmland	Compaction Prone	Stony/Rocky	Droughty Soil	Shallow Bedrock	Hydric Soil	
8	Revised Proposed Route	129.7	243 [28]	120 [8]	162 [27]		197 [20]	50 [8]			166 [12]	87 [9]		243 [28]
	Route 8G	146.9	332 [28]	222 [26]	123 [3]		201 [6]	86 [61]		3	209 [26]	249 [28]		332 [28]
	Route 8H	137.5	256 [88]	201 [81]	110 [47]		108 [32]	116 [72]		3	146 [40]	160 [70]		256 [88]
9	Revised Proposed Route	165.3	350 [87]	161 [80]	217 [47]	5	181 [32]	140 [111]		49	137 [39]	179 [70]		350 [87]
	Segment 9 FEIS Proposed Route	162.2	360 [28]	149 [23]	181 [8]	4	223 [9]	99 [21]		51	183 [20]	198 [25]		360 [28]
	Route 9K	174.6	425 [27]	181 [24]	230 [3]	5	274 [6]	110 [61]		49	200 [24]	267 [27]		425 [27]
	Proposed – Comparison portion for Toana Road Variations 1/1-A	8.7	16		16		16			<1	<1	16		16
	Toana Road Variation 1	8.5	16		15		16			<1	<1	16		16
	Toana Road Variation 1-A	8.9	11		11		11			<1	<1	11		11
8/9	Comparison portion for the Alternative 5 WWE Corridor and Alternative 5 Helicopter-assisted Construction Variations	66.1 <sup>3/</sup>	99 [5]	39	69 [5]		89 [5]	27		<1	29	81 [5]		99 [5]
	Alternative 5 WWE Corridor Variation	62.2 <sup>4/</sup>	86 [16]	45 [6]	61 [16]		76 [16]	30 [6]		<1	25	65 [10]		86 [16]
	Alternative 5 Helicopter-assisted Construction Variation	66.1 <sup>3/</sup>	69 [5]	29	48 [5]		61 [5]	16		<1	21	59 [5]		69 [5]

Notes: Acreages have been rounded to the nearest whole acre; therefore, numbers are inexact and columns/rows may not sum exactly

Blank cells indicate zero acres or null value

The numbers in square brackets "[ ]" correspond to impacts that would occur on BLM-managed lands within the SRBOP

<sup>1/</sup> Portions of the disturbance areas may overlap; therefore, actual effects may be less than presented<sup>2/</sup> "t" indicates only a trace amount (<0.1 acre) of impact<sup>3/</sup> This variation consists of approximately 32.9 miles of Route 8G and 33.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.<sup>4/</sup> This variation consists of approximately 31.0 miles of Route 8G and 31.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

Source: NRCS 2006

Table D.15-3.        (This table has been removed as it is not relevant to the Supplemental Environmental Impact Statement))

Table D.15-4.        (This table has been removed as it is not relevant to the Supplemental Environmental Impact Statement)

Table D.16-1. Surface Water Road Crossings by Crossing Type

Segment Number	Revised Proposed Routes, Other Routes, and Route Variations	Segment Length (Miles)	Total Crossings <sup>1/</sup>	Number of Crossings																	Estimated Disturbance Area (Acres) <sup>2/</sup>	Total Drive-through	Total Cut/Fill	Total Culvert
				Ephemeral			Intermittent Dry				Intermittent Wet			Perennial			Artificial							
				Drive Through	Ford	TMDL/ 303(d)	Drive Through	Ford	Temporary Culvert	TMDL/ 303(d)	Avoid	Temporary Culvert	TMDL/ 303(d)	Permanent Culvert	Avoid	TMDL/ 303(d)	Avoid	Temporary Bridges	TMDL/ 303(d)					
8	Revised Proposed Route	129.7	204	88	42	9	6	13						1	2	6		36	1	1	94	55	2	
	Route 8G	146.9	149	83	39	8				1				1	1	4		12		<1	83	39	1	
	Route 8H	137.5	115	63	27	11										3		11		<1	63	27		
9	Revised Proposed Route	165.3	172	61	44	19	4	10	3	5			11		1			14		2	65	54	15	
	Segment 9 FEIS Proposed Route	162.2	319	158	32	15	10	6	3	3			15		3	2		72		2	168	38	21	
	Route 9K	174.6	237	97	69	16	5	10	2	6			11	1	2	1		17		3	102	79	15	
	Proposed – Comparison portion for Toana Road Variations 1/1-A	8.7	13	6	4													3		t <sup>3/</sup>	6	4		
	Toana Road Variation 1	8.5	15	8	5													2		t <sup>3/</sup>	8	5		
	Toana Road Variation 1-A	8.9	10	5	3													2		t <sup>3/</sup>	5	3		
8/9	Comparison portion for the Alternative 5 WWE Corridor and Alternative 5 Helicopter-assisted Construction Variations	66.1 <sup>4/</sup>	58	44	8			1									5			<1	44	9		
	Alternative 5 WWE Corridor Variation	62.2 <sup>5/</sup>	58	17	29												12			<1	14	29		
	Alternative 5 Helicopter-assisted Construction Variation	66.1 <sup>4/</sup>	63	40	16		1										6			<1	41	16		

Notes: Acreages have been rounded to the nearest whole acre; therefore, numbers are inexact and columns/rows may not sum exactly

- Blank cells indicate zero acres or null value
- <sup>1/</sup> The number of crossings are based on the disturbance acres for each stream crossing type and have been rounded to the nearest whole number; therefore numbers are inexact and columns/rows may not sum exactly
- <sup>2/</sup> Estimated Disturbance Acres are in addition to the disturbance area of the road that would be needed for stream crossings
- <sup>3/</sup> "t" indicates only a trace amount (<0.1 acre) of disturbance
- <sup>4/</sup> This variation consists of approximately 32.9 miles of Route 8G and 33.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.
- <sup>5/</sup> This variation consists of approximately 31.0 miles of Route 8G and 31.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

Source: USGS 2009



Table D.16-2. Potential Construction Disturbance (in Acres per Risk Rank) In Areas of Flood Hazard Risk

Segment Number	Revised Proposed Routes, Other Routes, and Route Variations	Segment Length in Miles	Flood Hazard Rank		
			0 to 69	70 to 84	85 to 100
			Low Risk	Moderate Risk	High Risk
8	Revised Proposed Route	129.7	1,868	36	367
	Proposed – Existing 500-kV Removal <sup>1/</sup>	1.1	6		3
	Route 8G	146.9	2,258	193	301
	Route 8H	137.5	2,123	74	320
	Route 8H – Existing 138-kV Removal	25.7	35	3	10
	Route 8H – Existing 500-kV Removal	1.9	10		
9	Revised Proposed Route	165.3	2,591	232	325
	Proposed – Existing 138-kV Removal <sup>1/</sup>	25.7	35	3	10
	Segment 9 FEIS Proposed Route	162.2	2,658	258	368
	Route 9K	174.6	2,716	350	317
	Proposed – Comparison portion for Toana Road Variations 1/1-A	8.7	113	14	50
	Toana Road Variation 1	8.5	131	5	32
	Toana Road Variation 1-A	8.9	123	5	35
8/9	Comparison portion for the Alternative 5 WWE Corridor and Alternative 5 Helicopter-assisted Construction Variations	66.1 <sup>2/</sup>	805	129	197
	Alternative 5 WWE Corridor Variation	62.2 <sup>3/</sup>	866	80	167
	Alternative 5 Helicopter-assisted Construction Variation	66.1 <sup>2/</sup>	711	153	163

Notes: Acreages have been rounded to the nearest whole acre; therefore, numbers are inexact and columns/rows may not sum exactly

Blank cells indicate zero acres or null value

<sup>1/</sup> Portions of the disturbance areas may overlap; therefore, actual effects may be less than presented

<sup>2/</sup> This variation consists of approximately 32.9 miles of Route 8G and 33.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

<sup>3/</sup> This variation consists of approximately 31.0 miles of Route 8G and 31.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

Source: NPMS 1996

Table D.16-3. Potential Operations (in Acres per Risk Rank) Disturbance In Areas of Flood Hazard Risk

Segment Number	Revised Proposed Routes, Other Routes, and Route Variations	Segment Length in Miles	Flood Hazard Rank		
			0 to 69	70 to 84	85 to 100
			Low Risk	Moderate Risk	High Risk
8	Revised Proposed Route	129.7	209	5	29
	Route 8G	146.9	276	20	36
	Route 8H	137.5	219	5	32
9	Revised Proposed Route	165.3	296	21	32
	Segment 9 FEIS Proposed Route	162.2	298	25	37
	Route 9K	174.6	353	36	37
	Proposed – Comparison portion for Toana Road Variations 1/1-A	8.7	13	1	2
	Toana Road Variation 1	8.5	13	1	1
	Toana Road Variation 1-A	8.9	8	1	2
8/9	Comparison portion for the Alternative 5 WWE Corridor and Alternative 5 Helicopter-assisted Construction Variations	66.1 <sup>1/</sup>	66	15	18
	Alternative 5 WWE Corridor Variation	62.2 <sup>2/</sup>	58	8	20
	Alternative 5 Helicopter-assisted Construction Variation	66.1 <sup>1/</sup>	44	12	13

Notes: Acreages have been rounded to the nearest whole acre; therefore, numbers are inexact and columns/rows may not sum exactly

Blank cells indicate zero acres or null value

<sup>1/</sup> This variation consists of approximately 32.9 miles of Route 8G and 33.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

<sup>2/</sup> This variation consists of approximately 31.0 miles of Route 8G and 31.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

Source: NPMS 1996

Table D.16-4.        (This table has been removed as it is not relevant to the Supplemental Environmental Impact Statement)

Table D.16-5. Surface Water Diversions Within One-Half Mile Buffer of Transmission Lines

Segment Number	Revised Proposed Routes, Other Routes, and Route Variations	Segment Length in Miles	Surface Water Diversions
8	Revised Proposed Route	129.7	261
	Proposed – Existing 500-kV Removal <sup>1/</sup>	1.1	1
	Route 8G	146.9	363
	Route 8H	137.5	359
	Route 8H – Existing 138-kV Removal	25.7	86
	Route 8H – Existing 500-kV Removal	1.9	2
9	Revised Proposed Route	165.3	337
	Proposed – Existing 138-kV Removal <sup>1/</sup>	25.7	86
	Segment 9 FEIS Proposed Route	162.2	403
	Route 9K	174.6	332
	Proposed – Comparison portion for Toana Road Variations 1/1-A	8.7	5
	Toana Road Variation 1	8.5	5
	Toana Road Variation 1-A	8.9	5
8/9	Comparison portion for the Alternative 5 WWE Corridor and Alternative 5 Helicopter-assisted Construction Variations	66.1 <sup>2/</sup>	119
	Alternative 5 WWE Corridor Variation	62.2 <sup>3/</sup>	122
	Alternative 5 Helicopter-assisted Construction Variation	66.1 <sup>2/</sup>	119

Note:

<sup>1/</sup> Portions of the disturbance areas may overlap; therefore, actual effects may be less than presented

<sup>2/</sup> This variation consists of approximately 32.9 miles of Route 8G and 33.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

<sup>3/</sup> This variation consists of approximately 31.0 miles of Route 8G and 31.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

Source: IDWR 2014

Table D.16-6. Number of Surface Water Road Crossings by Stream Type

Segment Number	Revised Proposed Routes, Other Routes, and Route Variations	Segment Length in Miles	Perennial			Intermittent - Wet		Intermittent - Dry			Ephemeral			Artificial <sup>1/</sup>			Total					
			Non-listed	Sediment-Impaired	Temperature - Impaired	Non-listed	Sediment-Impaired	Non-listed	Sediment-Impaired	Temperature - Impaired	Non-listed	Sediment-Impaired	Temperature - Impaired	Non-listed	Sediment-Impaired	Temperature - Impaired	Stream Crossings <sup>2/</sup>	Percent Ephemeral, Non-listed	Sediment-Impaired	Percent of SI to total crossings	Temperature-Impaired	Percent of TI to Total Crossings
8	Revised Proposed Route	129.7	8				1	19			128	11	3	36	1		204	62.7%	13	6.4%	3	1.5%
	Route 8G	146.9	5				1		1	1	120	9	1	12			149	80.5%	11	7.4%	2	1.3%
	Route 8H	137.5	3								87	14		11			115	75.7%	14	12.2%		
9	Revised Proposed Route	165.3	1			11		17	5		104	16	4	14			172	60.5%	21	12.2%	4	2.3%
	Segment 9 FEIS Proposed Route	162.2	5			15		17	5	1	188	14	4	71	1		319	58.9%	20	6.3%	5	1.6%
	Route 9K	174.6	3			11	1	17	6	1	165	12	5	17			237	69.6%	19	8.0%	6	2.5%
	Proposed – Comparison portion for Toana Road Variations 1/1-A	8.7									10			3			13	76.9%				
	Toana Road Variation 1	8.5									13			2			15	86.7%				
	Toana Road Variation 1-A	8.9									8			2			10	80.0%				
8/9	Comparison portion for the Alternative 5 WWE Corridor and Alternative 5 Helicopter-assisted Construction Variations	66.1 <sup>3/</sup>							1	1	51		1	5			58	87.9%	1	1.7%	2	3.4%
	Alternative 5 WWE Corridor Variation	62.2 <sup>4/</sup>									45		1	12			58	77.6%			1	1.7%
	Alternative 5 Helicopter-assisted Construction Variation	66.1 <sup>3/</sup>							1	1	55		1	6			63	87.3%	1	1.6%	2	3.2%

Notes: Blank cells indicate null value

SI = sediment-impaired; TI = temperature-impaired

<sup>1/</sup> Artificial = pipe, aqueduct, canal, drain, ditch or artificial path (natural stream channelized into pipe, ditch or culvert)

<sup>2/</sup> Total stream crossings may not add up because some streams are both sediment- AND temperature-impaired and are therefore counted twice

<sup>3/</sup> This variation consists of approximately 32.9 miles of Route 8G and 33.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

<sup>4/</sup> This variation consists of approximately 31.0 miles of Route 8G and 31.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

Source: IDEQ 2014

**Table D.16-7.** Potential Construction Disturbance (in Acres per Depth Range) in Areas Containing Shallow Groundwater

Segment Number	Revised Proposed Routes and Other Routes	Segment Length in Miles	Depth to Groundwater					Total Acres
			1 to 4 feet	4 to 7 feet	7 to 10 feet	10 to 14 feet	14+ feet	
8	Revised Proposed Route	129.7	1					1
	Route 8G	146.9	5					5
	Route 8H	137.5	<1					<1
9	Revised Proposed Route	165.3	4					4
	Segment 9 FEIS Proposed Route	162.2	53					53
	Route 9K	174.6	9					9
8/9	Comparison portion for the Alternative 5 WWE Corridor and Alternative 5 Helicopter-assisted Construction Variations	66.1 <sup>1/</sup>	8					8
	Alternative 5 WWE Corridor Variation	62.2 <sup>2/</sup>	5					5
	Alternative 5 Helicopter-assisted Construction Variation	66.1 <sup>1/</sup>	33					33

Source: STATSGO

Notes: Acreages have been rounded to the nearest whole acre; therefore, numbers are inexact and columns/rows may not sum exactly

Blank cells indicate zero acres or null value

<sup>1/</sup> This variation consists of approximately 32.9 miles of Route 8G and 33.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

<sup>2/</sup> This variation consists of approximately 31.0 miles of Route 8G and 31.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

Source: NRCS SSURGO 2010

**Table D.16-8.** Potential Operations Disturbance (in Acres per Depth Range) in Areas Containing Shallow Groundwater

Segment Number	Revised Proposed Routes and Other Routes	Segment Length in Miles	Depth to Groundwater					Total Acres
			1 to 4 feet	4 to 7 feet	7 to 10 feet	10 to 14 feet	14+ feet	
8	Revised Proposed Route	129.7	<1					<1
	Route 8G	146.9	1					1
	Route 8H	137.5	<1					<1
9	Revised Proposed Route	165.3	<1					<1
	Segment 9 FEIS Proposed Route	162.2	3					3
	Route 9K	174.6	1					1
8/9	Comparison portion for the Alternative 5 WWE Corridor and Alternative 5 Helicopter-assisted Construction Variations	66.1 <sup>1/</sup>	1					1
	Alternative 5 WWE Corridor Variation	62.2 <sup>2/</sup>	<1					<1
	Alternative 5 Helicopter-assisted Construction Variation	66.1 <sup>1/</sup>	1					1

Source: STATSGO

Notes: Acreages have been rounded to the nearest whole acre; therefore, numbers are inexact and columns/rows may not sum exactly

Blank cells indicate zero acres or null value

<sup>1/</sup> This variation consists of approximately 32.9 miles of Route 8G and 33.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

<sup>2/</sup> This variation consists of approximately 31.0 miles of Route 8G and 31.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

Source: NRCS SSURGO 2010

Table D.16-9.        (This table has been removed as it is not relevant to the Supplemental Environmental Impact Statement)



Table D.16-10. Potable Water Wells within One-Half Mile of Transmission Lines

Segment Number	Revised Proposed Routes, Other Routes, and Route Variations	Segment Length (Miles)	Potable Water Wells
8	Revised Proposed Route	129.7	47
	Proposed – Existing 500-kV Removal <sup>1/</sup>	1.1	1
	Route 8G	146.9	41
	Route 8H	137.5	43
	Route 8H – Existing 138-kV Removal	25.7	
	Route 8H – Existing 500-kV Removal	1.9	1
9	Revised Proposed Route	165.3	15
	Proposed – Existing 138-kV Removal <sup>1/</sup>	25.7	
	Segment 9 FEIS Proposed Route	162.2	26
	Route 9K	174.6	13
	Proposed – Comparison portion for Toana Road Variations 1/1-A	8.7	
	Toana Road Variation 1	8.5	
	Toana Road Variation 1-A	8.9	
8/9	Comparison portion for the Alternative 5 WWE Corridor and Alternative 5 Helicopter-assisted Construction Variations	66.1 <sup>2/</sup>	13
	Alternative 5 WWE Corridor Variation	62.2 <sup>3/</sup>	17
	Alternative 5 Helicopter-assisted Construction Variation	66.1 <sup>2/</sup>	13

Notes: This data contains 7 wells which are within both Segment 8 and Segment 9 analysis areas and are therefore counted twice. The total number of wells is 71, not 78.

Blank cells indicate zero miles or null value

<sup>1/</sup> Portions of the disturbance areas may overlap; therefore, actual effects may be less than presented

<sup>2/</sup> This variation consists of approximately 32.9 miles of Route 8G and 33.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

<sup>3/</sup> This variation consists of approximately 31.0 miles of Route 8G and 31.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

Source: IDWR 2010

**Table D.16-11.** Miles of the Eastern Snake River Plain Aquifer Crossed by Proposed Routes and Other Routes

Segment Number	Revised Proposed Routes and Other Routes	Segment Length (Miles)	Miles of Eastern Snake River Plain Aquifer Crossed
8	Revised Proposed Route	129.7	42.3
	Route 8G	146.9	24.3
	Route 8H	137.5	24.3
9	Revised Proposed Route	165.3	8.4
	Segment 9 FEIS Proposed Route	162.2	8.4
	Route 9K	174.6	8.4
8/9	Comparison portion for the Alternative 5 WWE Corridor and Alternative 5 Helicopter-assisted Construction Variations	66.1 <sup>1/</sup>	
	Alternative 5 WWE Corridor Variation	62.2 <sup>2/</sup>	
	Alternative 5 Helicopter-assisted Construction Variation	66.1 <sup>1/</sup>	

Notes: Mileages have been rounded to the nearest tenth of a mile; therefore, numbers are inexact and columns/rows may not sum exactly

Blank cells indicate zero miles or null value

<sup>1/</sup> This variation consists of approximately 32.9 miles of Route 8G and 33.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

<sup>2/</sup> This variation consists of approximately 31.0 miles of Route 8G and 31.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

Source: IDWR 2006

Table D.16-12. Estimated Transmission Line Construction Water Requirements per Segment

Segment Number	Revised Proposed Routes, Other Routes, and Route Variations	Segment Length (Miles)	Total Water Requirement	Total Water Requirement	Construction Period
			(gallons)	(acre-feet)	(days)
8	Revised Proposed Route	129.7	3,750,215	11.5	429
	Proposed – Existing 500-kV Removal <sup>1/</sup>	1.1	32,806	0.1	4
	Route 8G	146.9	4,250,436	13.1	486
	Route 8G – Existing 500-kV Removal	1.9	54,938	0.2	6
	Route 8H	137.5	3,920,811	12.0	449
	Route 8H – Existing 138-kV Removal	25.7	743,104	2.3	85
	Route 8H – Existing 500-kV Removal	1.9	54,938	0.2	6
9	Revised Proposed Route	165.3	4,779,572	14.7	547
	Proposed – Existing 138-kV Removal <sup>1/</sup>	25.7	743,103	2.3	85
	Segment 9 FEIS Proposed Route	162.2	4,689,937	14.4	536
	Route 9K	174.6	5,048,477	15.5	578
	Proposed – Comparison Portion for Toana Road Variations 1/1-A	8.7	251,556	0.8	29
	Toana Road Variation 1	8.5	245,774	0.8	28
	Toana Road Variation 1-A	8.9	257,339	0.8	29
8/9	Comparison portion for the Alternative 5 WWE Corridor and Alternative 5 Helicopter-assisted Construction Variations	66.1 <sup>2/</sup>	1,911,251	5.9	218
	Alternative 5 WWE Corridor Variation	62.2 <sup>3/</sup>	1,798,484	5.5	205
	Alternative 5 Helicopter-assisted Construction Variation	66.1 <sup>2/</sup>	1,911,251	5.9	218

Note:

<sup>1/</sup> Portions of the disturbance areas may overlap; therefore, actual effects may be less than presented

<sup>2/</sup> This variation consists of approximately 32.9 miles of Route 8G and 33.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

<sup>3/</sup> This variation consists of approximately 31.0 miles of Route 8G and 31.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

Source: RMP and IPC 2013

Table D.16-13. TMDL and 303(d) listed Streams in the Analysis Area

		TMDL Listed		303(d) Listed	
Revised Proposed Routes, Other Routes, and Route Variations	Stream Name	Sediment	Temperature	Sediment	Temperature
Segment 8 Revised Proposed Route	Clover Creek				X
	Cold Springs Creek	X			
	Little Canyon Creek	X			
	Little Canyon Creek Tributary 1	X			
	Malad River	X			
	Pioneer Reservoir				X
	Sand Creek			X	
	Sand Creek Tributary 1			X	X
	Sand Creek Tributary 2			X	X
	Sand Creek Tributary 3			X	
	Sand Creek Tributary 4			X	
	Sand Creek Tributary 5			X	
	Sand Creek Tributary 6			X	
	Sand Creek Tributary 7			X	
	Sand Creek Tributary 8			X	
	Snake River				X
	South Gooding Main Canal	X			
Route 8G	Birch Creek Tributary 10			X	
	Birch Creek Tributary 7			X	
	Birch Creek Tributary 8			X	
	Birch Creek Tributary 9			X	
	Castle Creek Tributary 2		X		
	Castle Creek Tributary 3		X		
	Castle Creek Tributary 4		X		
	Castle Creek Tributary 5		X		
	Castle Creek Tributary 6		X		
	Birch Creek Tributary 5			X	
	Birch Creek Tributary 6			X	
	Browns Creek			X	
	Bruneau River				X
	Castle Creek	X	X		
	Catherine Creek	X			
	Deadman Creek			X	
	Deadman Creek Tributary 10			X	
	Deadman Creek Tributary 15			X	
	Deadman Creek Tributary 18			X	
	Deadman Creek Tributary 5			X	
	Jacks Creek	X			X
	Poison Creek			X	
	Sailor Creek			X	
	Sailor Creek Tributary 1			X	
	Sailor Creek Tributary 2			X	
	Sailor Creek Tributary 3			X	
	Sinker Creek	X	X		

Table D.16-13. TMDL and 303(d) listed Streams in the Analysis Area cont.

		TMDL Listed		303(d) Listed	
Revised Proposed Routes, Other Routes, and Route Variations	Stream Name	Sediment	Temperature	Sediment	Temperature
Route 8H	Browns Creek			X	
	Corder Creek Tributary 1			X	
	Corder Creek Tributary 2			X	
	Corder Creek Tributary 3			X	
	Corder Creek Tributary 4			X	
	Corder Creek Tributary 5			X	
	Corder Creek Tributary 6			X	
	Corder Creek Tributary 7			X	
	Deadman Creek			X	
	Deadman Creek Tributary 10			X	
	Deadman Creek Tributary 15			X	
	Deadman Creek Tributary 18			X	
	Deadman Creek Tributary 5			X	
	Jack Creek			X	
	Rabbit Creek			X	
	Rabbit Creek Tributary 1			X	
	Sailor Creek			X	
	Sailor Creek Tributary 1			X	
	Sailor Creek Tributary 2			X	
	Sailor Creek Tributary 3			X	
	Snake River				X
Route 8H – Existing 138-kV Removal	Corder Creek Tributary 1			X	
	Corder Creek Tributary 2			X	
	Corder Creek Tributary 4			X	
	Corder Creek Tributary 6			X	
	Corder Creek Tributary 7			X	
	Rabbit Creek			X	
	Rabbit Creek Tributary 1			X	

Table D.16-13. TMDL and 303(d) listed Streams in the Analysis Area cont.

		TMDL Listed		303(d) Listed	
Revised Proposed Routes, Other Routes, and Route Variations	Stream Name	Sediment	Temperature	Sediment	Temperature
Segment 9 Revised Proposed Route	Browns Creek			X	
	Corder Creek Tributary 1			X	
	Corder Creek Tributary 2			X	
	Corder Creek Tributary 3			X	
	Corder Creek Tributary 4			X	
	Corder Creek Tributary 5			X	
	Corder Creek Tributary 6			X	
	Corder Creek Tributary 7			X	
	Cottonwood Creek Tributary 1	X			X
	Deadman Creek			X	
	Deadman Creek Tributary 1			X	
	Deadman Creek Tributary 10			X	
	Deadman Creek Tributary 11			X	
	Deadman Creek Tributary 12			X	
	Deadman Creek Tributary 13			X	
	Deadman Creek Tributary 14			X	
	Deadman Creek Tributary 15			X	
	Deadman Creek Tributary 16			X	
	Deadman Creek Tributary 17			X	
	Deadman Creek Tributary 18			X	
	Deadman Creek Tributary 2			X	
	Deadman Creek Tributary 3			X	
	Deadman Creek Tributary 4			X	
	Deadman Creek Tributary 5			X	
	Deadman Creek Tributary 6			X	
	Deadman Creek Tributary 7			X	
	Deadman Creek Tributary 8			X	
	Deadman Creek Tributary 9			X	
	Devil Creek		X		
	Jack Creek			X	
	McMullen Creek				X
	McMullen Creek Tributary 1				X
	McMullen Creek Tributary 2				X
	McMullen Creek Tributary 3				X
	McMullen Creek Tributary 6				X
	McMullen Creek Tributray 4				X
	McMullen Creek Tributray 5				X
	Rabbit Creek			X	
	Rabbit Creek Tributary 1			X	
	Sailor Creek			X	
	Sailor Creek Tributary 1			X	
	Sailor Creek Tributary 2			X	
	Sailor Creek Tributary 3			X	
	Salmon Falls Creek		X		
	Snake River				X
Proposed – Existing 138-kV Removal <sup>1/</sup>	Corder Creek Tributary 1			X	
	Corder Creek Tributary 2			X	
	Corder Creek Tributary 4			X	
	Corder Creek Tributary 6			X	
	Corder Creek Tributary 7			X	
	Rabbit Creek			X	
	Rabbit Creek Tributary 1			X	

Table D.16-13. TMDL and 303(d) listed Streams in the Analysis Area cont.

		TMDL Listed		303(d) Listed	
Revised Proposed Routes, Other Routes, and Route Variations	Stream Name	Sediment	Temperature	Sediment	Temperature
Segment 9 FEIS Proposed Route	Browns Creek			X	
	Bruneau River				X
	Castle Creek	X	X		
	Castle Creek	X	X		
	Castle Creek Tributary 2		X		
	Catherine Creek	X			
	Cottonwood Creek Tributary 1	X			X
	Deadman Creek			X	
	Deadman Creek Tributary 1			X	
	Deadman Creek Tributary 10			X	
	Deadman Creek Tributary 11			X	
	Deadman Creek Tributary 12			X	
	Deadman Creek Tributary 13			X	
	Deadman Creek Tributary 14			X	
	Deadman Creek Tributary 15			X	
	Deadman Creek Tributary 16			X	
	Deadman Creek Tributary 17			X	
	Deadman Creek Tributary 18			X	
	Deadman Creek Tributary 2			X	
	Deadman Creek Tributary 3			X	
	Deadman Creek Tributary 4			X	
	Deadman Creek Tributary 5			X	
	Deadman Creek Tributary 6			X	
	Deadman Creek Tributary 7			X	
	Deadman Creek Tributary 8			X	
	Deadman Creek Tributary 9			X	
	Devil Creek		X		
	Jacks Creek	X			X
	McMullen Creek				X
	McMullen Creek Tributary 1				X
	McMullen Creek Tributary 2				X
	McMullen Creek Tributary 3				X
	McMullen Creek Tributary 4				X
	McMullen Creek Tributary 5				X
	McMullen Creek Tributary 6				X
	Pickett Creek	X			
	Sailor Creek			X	
	Sailor Creek Tributary 1			X	
	Sailor Creek Tributary 2			X	
	Sailor Creek Tributary 3			X	
	Salmon Falls Creek		X		
	Sinker Creek	X	X		
	South Side Canal				X
	Sugar Valley Wash	X			

Table D.16-13. TMDL and 303(d) listed Streams in the Analysis Area cont.

Revised Proposed Routes, Other Routes, and Route Variations	Stream Name	TMDL Listed		303(d) Listed	
		Sediment	Temperature	Sediment	Temperature
Route 9K	Birch Creek Tributary 10			X	
	Birch Creek Tributary 7			X	
	Birch Creek Tributary 8			X	
	Birch Creek Tributary 9			X	
	Castle Creek Tributary 2		X		
	Castle Creek Tributary 3		X		
	Castle Creek Tributary 4		X		
	Castle Creek Tributary 5		X		
	Castle Creek Tributary 6		X		
	Birch Creek Tributary 5			X	
	Birch Creek Tributary 6			X	
	Browns Creek			X	
	Bruneau River				X
	Castle Creek	X	X		
	Catherine Creek	X			
	Cottonwood Creek Tributary 1	X			X
	Deadman Creek			X	
	Deadman Creek Tributary 1			X	
	Deadman Creek Tributary 10			X	
	Deadman Creek Tributary 11			X	
	Deadman Creek Tributary 12			X	
	Deadman Creek Tributary 13			X	
	Deadman Creek Tributary 14			X	
	Deadman Creek Tributary 15			X	
	Deadman Creek Tributary 16			X	
	Deadman Creek Tributary 17			X	
	Deadman Creek Tributary 18			X	
	Deadman Creek Tributary 2			X	
	Deadman Creek Tributary 3			X	
	Deadman Creek Tributary 4			X	
	Deadman Creek Tributary 5			X	
	Deadman Creek Tributary 6			X	
	Deadman Creek Tributary 7			X	
	Deadman Creek Tributary 8			X	
	Deadman Creek Tributary 9			X	
	Devil Creek		X		
	McMullen Creek				X
	McMullen Creek Tributary 1				X
	McMullen Creek Tributary 2				X
	McMullen Creek Tributary 3				X
	McMullen Creek Tributary 4				X
	McMullen Creek Tributary 5				X
	McMullen Creek Tributary 6				X
	Poison Creek			X	
	Sailor Creek			X	
	Sailor Creek Tributary 1			X	
	Sailor Creek Tributary 2			X	
	Sailor Creek Tributary 3			X	
	Salmon Falls Creek		X		
	Sinker Creek	X	X		
Proposed – Comparison portion for Toana Road Variations 1/1-A	Devil Creek		X		
Toana Road Variation 1	Devil Creek		X		
Toana Road Variation 1-A	Devil Creek		X		



Table D.16-13. TMDL and 303(d) listed Streams in the Analysis Area cont.

		TMDL Listed		303(d) Listed	
Revised Proposed Routes, Other Routes, and Route Variations	Stream Name	Sediment	Temperature	Sediment	Temperature
Comparison portion for the Alternative 5 WWE Corridor and Alternative 5 Helicopter-assisted Construction Variations	Browns Creek			X	
	Castle Creek	X	X		
	Castle Creek Tributary 1		X		
	Castle Creek Tributary 2		X		
	Catherine Creek	X			
	Sinker Creek	X	X		
Alternative 5 WWE Corridor Variation	Browns Creek			X	
	Castle Creek	X	X		
	Castle Creek Tributary 2		X		
	Catherine Creek	X			
	Pickett Creek	X			
	Sinker Creek	X	X		
Alternative 5 Helicopter-assisted Construction Variation	Browns Creek			X	
	Castle Creek	X	X		
	Castle Creek Tributary 1		X		
	Castle Creek Tributary 2		X		
	Catherine Creek	X			
	Sinker Creek	x	x		

Note:  
<sup>1/</sup> Portions of the disturbance areas may overlap; therefore, actual effects may be less than presented  
Source: IDEQ 2014

Table D.16-14. Acreage Comparison of Construction Related Stream Impacts

Segment Number	Revised Proposed Routes, Other Routes, and Route Variations	Segment Length (Miles)	Within 500 feet of Perennial and Intermittent Streams		Within 100 feet of Ephemeral Streams		Within 500 feet of TMDL and 303(d) Listed - Sediment Streams		Total
			Disturbed Acres	% of Total Disturbance Area	Disturbed Acres	% of Total Disturbance Area	Disturbed Acres	% of Total Disturbance Area	Disturbed Acres
8	Revised Proposed Route	129.7	78	3.4%	109	4.8%	48	2.1%	2,271
	Proposed - Existing 500-kV Removal <sup>1/</sup>	1.1							9
	Route 8G	146.9	66	2.4%	86	3.1%	78	2.8%	2,752
	Route 8H	137.5	22	0.9%	57	2.2%	85	3.4%	2,525
	Route 8H – Existing 138-kV Removal	25.7			1	1.8%	2	4.8%	48
	Route 8H – Existing 500-kV Removal	1.9			<1	3.2%			10
9	Revised Proposed Route	165.3	147	4.7%	87	2.8%	105	3.3%	3,149
	Proposed – Existing 138-kV Removal <sup>1/</sup>	25.7			1	1.8%	2	4.8%	48
	Segment 9 FEIS Proposed Route	162.2	171	5.2%	89	2.7%	90	2.7%	3,294
	Route 9K	174.6	188	5.5%	100	2.9%	98	2.9%	3,383
	Proposed - Comparison portion for Toana Road Variations 1/1-A	8.7			4	2.3%			177
	Toana Road Variation 1	8.5			8	4.7%			168
	Toana Road Variation 1-A	8.9			17	10.6%			163
8/9	Comparison portion for the Alternative 5 WWE Corridor and Alternative 5 Helicopter-assisted Construction Variations	66.1 <sup>2/</sup>	20	1.8%	40	3.6%	21	1.9%	1,130
	Alternative 5 WWE Corridor Variation	62.2 <sup>3/</sup>	19	1.7%	55	4.9%	21	1.9%	1,112
	Alternative 5 Helicopter-assisted Construction Variation	66.1 <sup>2/</sup>	16	1.6%	37	3.6%	31	3.0%	1,027

Notes: Acreages have been rounded to the nearest whole acre; therefore, numbers are inexact and columns/rows may not sum exactly

Blank cells indicate zero acres or null value

Acreages for TMDL and 303(d) listed streams overlap with perennial, intermittent, and ephemeral disturbance acres and are not included in the total disturbed acres column

<sup>1/</sup> Portions of the disturbance areas may overlap; therefore, actual effects may be less than presented

<sup>2/</sup> This variation consists of approximately 32.9 miles of Route 8G and 33.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

<sup>3/</sup> This variation consists of approximately 31.0 miles of Route 8G and 31.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.

Source: USGS 2009

Table D.16-15. Acreage Comparison of Operations Disturbance to Stream Buffers

Segment Number	Revised Proposed Routes, Other Routes, and Route Variations	Segment Length (Miles)	Within 500 feet of Perennial and Intermittent Streams		Within 100 feet of Ephemeral Streams		Within 500 feet of TMDL and 303(d) Listed - Sediment Streams		Total Disturbed Acres
			Disturbed Acres	% of Total Disturbance Area	Disturbed Acres	% of Total Disturbance Area	Disturbed Acres	% of Total Disturbance Area	
8	Revised Proposed Route	129.7	11	4.5%	11	4.7%	4	1.7%	243
	Proposed - Existing 500-kV Removal <sup>1/</sup>	1.1							<1
	Route 8G	146.9	8	2.4%	15	4.6%	7	2.2%	332
	Route 8H	137.5	2	1.0%	10	4.1%	8	2.9%	256
9	Revised Proposed Route	165.3	19	5.4%	13	3.7%	11	3.2%	350
	Proposed – Existing 138-kV Removal <sup>1/</sup>	25.7							
	Segment 9 FEIS Proposed Route	162.2	21	5.8%	17	4.8%	10	2.7%	360
	Route 9K	174.6	24	5.7%	17	4.1%	11	2.7%	425
	Proposed – Comparison portion for Toana Road Variations 1/1-A	8.7			<1	3.0%			16
	Toana Road Variation 1	8.5			1	5.5%			16
	Toana Road Variation 1-A	8.9			<1	4.4%			11
8/9	Comparison portion for the Alternative 5 WWE Corridor and Alternative 5 Helicopter-assisted Construction Variations	66.1 <sup>2/</sup>	3	3.1%	6	5.6%	4	4.2%	99
	Alternative 5 WWE Corridor Variation	62.2 <sup>3/</sup>	1	0.9%	6	6.5%	2	1.9%	86
	Alternative 5 Helicopter-assisted Construction Variation	66.1 <sup>2/</sup>	3	4.3%	4	6.3%	4	5.9%	69

Notes: Acreages have been rounded to the nearest whole acre; therefore, numbers are inexact and columns/rows may not sum exactly  
Blank cells indicate zero acres or null value  
Acreages for TMDL and 303(d) listed streams overlap with perennial, intermittent, and ephemeral disturbance acres and are not included in the total disturbed acres column  
<sup>1/</sup> "t" indicates only a trace amount (<0.1 acre) of occupancy  
<sup>2/</sup> This variation consists of approximately 32.9 miles of Route 8G and 33.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.  
<sup>3/</sup> This variation consists of approximately 31.0 miles of Route 8G and 31.2 miles of Route 9K, with each route built adjacent to the other but approximately 250 feet apart.  
Source: USGS 2009

**Table D.17-1.** Specific Land Uses Crossed or within 1,000 Feet of Proposed Routes and Other Routes

Route Name	Closest Milepost or Milepost Span	Land Use Feature	Direction From Route	Distance From Route (Ft)
Segment 8 Revised Proposed Route	1.5	Pivot	N	343
	1.7	Pivot	N	191
	1.9 - 2.5	Pivot	Crossed	Crossed
	2.1	Pivot	N	236
	2.2	Pivot	S	712
	2.5	Pivot	N	223
	2.6	Pivot	S	761
	2.7 - 3.5	Pivot	Crossed	Crossed
	3.7 - 4.1	Pivot	Crossed	Crossed
	2.8	Pivot	N	35
	2.9	Pivot	NE	8
	2.9	Pivot	N	249
	3.2	Pivot	N	148
	3.4	Pivot	N	251
	3.5	Residence	SW	196
	3.6	CAFO or Animal Pen	S	392
	3.6	Pivot	S	620
	3.7	Pivot	S	439
	3.7	Residence	S	643
	3.8	Pivot	N	410
	4.1	Pivot	NE	332
	14.8	Residence	SW	967
	14.9	Building or Other Structure	N	919
	14.9	Residence	N	981
	15.2	Pivot	S	415
	15.5	Pivot	N	505
	15.5	Pivot	S	624
	15.8	Residence	N	764
	15.9	Building or Other Structure	N	881
	16.2	Residence	NE	757
	16.5	CAFO or Animal Pen	N	171
	16.6 - 16.7	Pivot	Crossed	Crossed
	16.7	Pivot	N	267
	16.8	Residence	S	257
	16.9	Building or Other Structure	NE	408
	16.9	Building or Other Structure	NE	463
	16.9	Building or Other Structure	NE	521
	16.9	Building or Other Structure	NE	495
	16.9	Residence	NE	572
	17	Building or Other Structure	E	148
	17	Pivot	S	7
	17	Residence	E	283
	17.2	Pivot	N	609
	17.2	Residence	S	401
	17.3	Building or Other Structure	SW	798
	17.3	Building or Other Structure	SW	986
	17.3	Building or Other Structure	SW	744
	17.3	Building or Other Structure	S	954
	17.3	Building or Other Structure	S	606
	17.3	Building or Other Structure	S	754
	17.3	Building or Other Structure	S	932
	17.3	Building or Other Structure	S	559

**Table D.17-1.** Specific Land Uses Crossed or within 1,000 Feet of Proposed Routes and Other Routes cont.

Route Name	Closest Milepost or Milepost Span	Land Use Feature	Direction From Route	Distance From Route (Ft)
Segment 8 Revised Proposed Route (cont.)	17.3	Building or Other Structure	S	754
	17.3	CAFO or Animal Pen	SW	627
	17.3	Residence	SW	535
	17.4	Building or Other Structure	SW	980
	17.4	Building or Other Structure	S	886
	17.4	Building or Other Structure	S	780
	17.5	Residence	SW	826
	17.5 - 17.8	State Endowment Land	Crossed	Crossed
	17.6	Building or Other Structure	S	861
	17.6	Pivot	N	615
	17.6	Pivot	S	883
	17.7	Building or Other Structure	N	659
	17.8	Building or Other Structure	NE	614
	17.8	Building or Other Structure	N	589
	18.4	Pivot	SW	789
	18.7	Pivot	NE	178
	18.9	Pivot	SW	335
	19.2	Building or Other Structure	SW	876
	19.2	Building or Other Structure	S	745
	19.2	Building or Other Structure	S	826
	19.2	Residence	S	654
	19.3	Pivot	N	422
	19.8 - 20.0	Pivot	Crossed	Crossed
	19.9	Pivot	NE	167
	20.2	Pivot	E	29
	20.2	Pivot	S	397
	20.3 - 20.4	Pivot	Crossed	Crossed
	20.6 - 21.1	Pivot	Crossed	Crossed
	20.9	Pivot	NE	264
	21	Pivot	NE	298
	21.4	Pivot	N	349
	21.4 - 21.9	Pivot	Crossed	Crossed
	21.6	Pivot	SW	188
	22.1	Building or Other Structure	NE	700
	22.1	Building or Other Structure	NE	684
	22.1	Residence	NE	560
	22.3	Building or Other Structure	NE	440
	22.3	Pivot	SW	391
	22.4	Building or Other Structure	NE	751
	22.4	CAFO or Animal Pen	NE	772
	22.4	Residence	NE	724
	22.4 - 22.5	Pivot	Crossed	Crossed
	22.5	Building or Other Structure	NE	849
	22.6	Pivot	NE	583
	22.6	Pivot	SW	171
	22.7 - 23.1	Pivot	Crossed	Crossed
	23	Pivot	SW	198
	23.5	Building or Other Structure	SW	867
	23.6	Building or Other Structure	SW	947
	23.9 - 24.0	Pivot	Crossed	Crossed
	24.2	Pivot	SW	213
	26.7	North Alternate Oregon Trail	Crossed	Crossed

**Table D.17-1.** Specific Land Uses Crossed or within 1,000 Feet of Proposed Routes and Other Routes cont.

Route Name	Closest Milepost or Milepost Span	Land Use Feature	Direction From Route	Distance From Route (Ft)
Segment 8 Revised Proposed Route (cont.)	27.8	Pivot	SW	152
	28.1	Pivot	SW	279
	28.3	Building or Other Structure	SW	359
	28.3	Residence	SW	342
	28.4	Building or Other Structure	SW	510
	28.5 - 28.9	Pivot	Crossed	Crossed
	29	Pivot	SW	236
	29.2	Building or Other Structure	W	262
	29.3	Building or Other Structure	S	318
	29.3	Pivot	SW	558
	29.7	Pivot	S	470
	30.1	Pivot	S	406
	30.6	Pivot	S	503
	31.1	Pivot	S	542
	31.6	Pivot	S	597
	32.1	Pivot	S	386
	32.7	Pivot	S	844
	33.1	Pivot	S	804
	35.4	North Alternate Oregon Trail	Crossed	Crossed
	36.8	Pivot	SW	380
	43	Pivot	S	353
	43.2 - 44.2	State Endowment Land	Crossed	Crossed
	43.5	Pivot	S	591
	43.9	Pivot	S	567
	45.3 - 57.1	MUA-3 Lower Bennett	Crossed	Crossed
	46.8 - 47.3	Oregon Trail Rutted Segments	Crossed	Crossed
	47.1	North Alternate Oregon Trail	Crossed	Crossed
	49.3 - 50.3	State Endowment Land	Crossed	Crossed
	50.1 - 50.4	Oregon Trail Rutted Segments	Crossed	Crossed
	50.3	North Alternate Oregon Trail	Crossed	Crossed
	52.7	Residence	SW	171
	53.1	Building or Other Structure	SW	881
	53.1	Building or Other Structure	SW	776
	53.8	Wind Turbine	SW	459
	53.9	Wind Turbine	NE	457
	55.7	Wind Turbine	N	900
	55.7	Wind Turbine	W	143
	55.7	Wind Turbine	S	881
	55.8 - 56.3	Oregon Trail Rutted Segments	Crossed	Crossed
	56.1	Oregon NHT	Crossed	Crossed
	57.4 - 61.2	State Endowment Land	Crossed	Crossed
	59.1	Dam	SW	460
	65.7 - 67.7	Snake River Birds of Prey IBA	Crossed	Crossed
	65.7 - 67.7	Snake River Birds of Prey NCA	Crossed	Crossed
	72.0 - 72.7	State Endowment Land	Crossed	Crossed
	75.7 - 77.1	State Endowment Land	Crossed	Crossed
	80.3 - 81.1	State Endowment Land	Crossed	Crossed
	83.8 - 84.1	LEPA MA 8	Crossed	Crossed
	83.9	Dam	SW	109
	84.8 - 85.2	State Endowment Land	Crossed	Crossed
	85.8 - 89.7	LEPA MA 8	Crossed	Crossed
	91.0 - 97.7	Orchard Combat Training Center MOA	Crossed	Crossed

Table D.17-1. Specific Land Uses Crossed or within 1,000 Feet of Proposed Routes and Other Routes cont.

Route Name	Closest Milepost or Milepost Span	Land Use Feature	Direction From Route	Distance From Route (Ft)
Segment 8 Revised Proposed Route (cont.)	94.0 - 99.7	LEPA MA 8B	Crossed	Crossed
	99.7 - 118.7	Snake River Birds of Prey NCA	Crossed	Crossed
	99.7 - 118.7	Snake River Birds of Prey IBA	Crossed	Crossed
	100.2 - 101.2	State Endowment Land	Crossed	Crossed
	106.2 - 107.2	State Endowment Land	Crossed	Crossed
	107.7 - 108.4	Orchard Combat Training Center - Alpha Sector	Crossed	Crossed
	107.7 - 108.4	Orchard Combat Training Center MOA	Crossed	Crossed
	108.4	Pivot	N	90
	117.3 - 117.4	Pivot	Crossed	Crossed
	117.8	Pivot	NW	799
	117.9 - 118.0	Pivot	Crossed	Crossed
	118.2	Pivot	NW	546
	118.2	CAFO or Animal Pen	Crossed	Crossed
	118.3	Building or Other Structure	NW	622
	118.3	Residence	NW	709
	118.4	Residence	N	830
	118.5	Pivot	S	499
	118.5 - 118.6	Pivot	Crossed	Crossed
	118.9	Building or Other Structure	N	818
	118.9	Building or Other Structure	N	784
	118.9	Residence	N	830
	119.2	Pivot	N	975
	119.3	Building or Other Structure	S	988
	119.3	Building or Other Structure	S	866
	119.4	Building or Other Structure	S	805
	119.4	Building or Other Structure	S	850
	119.4	Building or Other Structure	S	874
	119.4	CAFO or Animal Pen	N	831
	119.4	CAFO or Animal Pen	S	745
	119.4	CAFO or Animal Pen	S	888
	119.4	Residence	N	425
	119.4	Residence	S	608
	120.1	Pivot	N	610
	120.7 - 122.5	Snake River Canyon SRMA	Crossed	Crossed
	120.7 - 123.7	Snake River Birds of Prey IBA	Crossed	Crossed
	120.7 - 123.7	Snake River Birds of Prey NCA	Crossed	Crossed
	121.5	CAFO or Animal Pen	N	962
	122.4	State Endowment Land	Crossed	Crossed
	122.5 - 122.8	Deer Flat NWR	Crossed	Crossed
	122.7 - 122.9	Oregon Trail SRMA	Crossed	Crossed
	122.7	Building or Other Structure	SE	944
	122.8	Oregon NHT	Crossed	Crossed
	123.1 - 123.7	Owyhee Front SRMA	Crossed	Crossed
	123.1 - 128.0	Black Mountain HMA	Crossed	Crossed
	123.7	Residence	NE	968
	123.9	Building or Other Structure	N	959
	123.9	Building or Other Structure	N	886
	126.4	Park or Recreation Area	NE	841
	127.8	Building or Other Structure	W	748
	127.8	Building or Other Structure	W	563
	127.8	Residence	W	786
	127.9	Building or Other Structure	W	983

Table D.17-1. Specific Land Uses Crossed or within 1,000 Feet of Proposed Routes and Other Routes cont.

Route Name	Closest Milepost or Milepost Span	Land Use Feature	Direction From Route	Distance From Route (Ft)
Segment 8 Revised Proposed Route (cont.)	127.9	Building or Other Structure	W	845
	127.9	Building or Other Structure	W	967
	127.9	Building or Other Structure	W	737
	127.9	Building or Other Structure	W	444
	127.9	Building or Other Structure	W	753
	127.9	Building or Other Structure	W	870
	127.9	Building or Other Structure	W	682
	127.9	Residence	W	971
	127.9	Residence	W	450
	127.9	Residence	W	955
	127.9	Residence	W	987
	127.9	Residence	W	841
	128	Building or Other Structure	NW	598
	128	Residence	W	702
	128.1	Building or Other Structure	E	373
	128.1	Building or Other Structure	W	981
	128.1	Building or Other Structure	W	882
	128.1	Building or Other Structure	W	979
	128.1	Building or Other Structure	SE	467
	128.1	Building or Other Structure	SE	337
	128.1	Building or Other Structure	SE	408
	128.1	Building or Other Structure	E	960
	128.1	Residence	W	986
	128.1	Residence	W	979
	128.1	Residence	E	995
	128.1	Residence	E	355
	128.2	Building or Other Structure	E	397
	128.2	Building or Other Structure	E	461
	128.2	Building or Other Structure	E	763
	128.2	Residence	E	828
	128.2	Residence	E	524
	128.3	Building or Other Structure	SW	629
	128.3	Building or Other Structure	SW	617
	128.3	Building or Other Structure	SW	524
	128.3	Residence	SW	528
	128.4	CAFO or Animal Pen	SW	887
Segment 8 Proposed - Existing 500-kV Removal <sup>1/</sup>	107.5 - 108.6	Snake River Birds of Prey NCA	Crossed	Crossed
	107.9 - 108.1	Pivot	Crossed	Crossed
Route 8G	0	Pivot	S	574
	0.0 - 1.9	MUA-7 Saylor Creek East	Crossed	Crossed
	0.4	Pivot	S	705
	1.6	Pivot	N	378
	1.8	Pivot	N	406
	1.8 - 2.3	Pivot	Crossed	Crossed
	2.2	Pivot	N	813
	2.3	Pivot	S	47
	2.5 - 3.0	Pivot	Crossed	Crossed
	2.6	Pivot	S	288
	3	Pivot	S	278
	3.2 - 3.5	Pivot	Crossed	Crossed
	3.4	Pivot	S	235
	3.7 - 3.8	Pivot	Crossed	Crossed



**Table D.17-1.** Specific Land Uses Crossed or within 1,000 Feet of Proposed Routes and Other Routes cont.

Route Name	Closest Milepost or Milepost Span	Land Use Feature	Direction From Route	Distance From Route (Ft)
Route 8G (cont.)	3.8	Pivot	S	373
	4	Building or Other Structure	W	234
	4	Building or Other Structure	W	244
	4	Building or Other Structure	SW	442
	4	Building or Other Structure	S	394
	4	Building or Other Structure	S	414
	4	Pivot	N	455
	4.1	Building or Other Structure	SE	215
	5.5	Pivot	S	897
	8.3 - 9.3	State Endowment Land	Crossed	Crossed
	14.4 - 19.4	State Endowment Land	Crossed	Crossed
	15.2 - 15.5	Pivot	Crossed	Crossed
	15.4	Pivot	S	856
	15.6	Pivot	N	658
	16.2	Pivot	N	537
	16.4	Pivot	N	595
	17.4	Pivot	N	402
	19.8 - 20.0	Pivot	Crossed	Crossed
	20.4	Pivot	N	523
	20.6	Building or Other Structure	N	611
	20.6	Building or Other Structure	N	657
	20.6	Residence	N	352
	20.7	Building or Other Structure	NE	585
	20.7	Pivot	S	743
	20.8	North Side Alternate Trail	Crossed	Crossed
	20.8	Pivot	N	565
	21	Pivot	N	474
	21.1	Building or Other Structure	N	190
	21.1	Building or Other Structure	N	368
	21.1	Building or Other Structure	N	279
	21.1	Residence	N	388
	21.1	Residence	S	543
	21.2	Residence	N	676
	21.4	Pivot	N	559
	21.4	Pivot	S	669
	21.5	Pivot	N	539
	21.6	Building or Other Structure	S	444
	21.6	Building or Other Structure	S	875
	21.6	Building or Other Structure	S	812
	21.6	Building or Other Structure	S	872
	21.6	CAFO or Animal Pen	S	577
	21.6	Residence	S	939
	21.7	Building or Other Structure	N	953
	21.7	Pivot	SE	41
	21.7	Residence	N	953
	21.9	Building or Other Structure	N	798
	21.9	Building or Other Structure	N	771
	21.9	CAFO or Animal Pen	NW	61
	21.9	Pivot	N	513
	21.9	Residence	NE	314
	21.9	Residence	N	629
	22	Building or Other Structure	NE	281

**Table D.17-1.** Specific Land Uses Crossed or within 1,000 Feet of Proposed Routes and Other Routes cont.

Route Name	Closest Milepost or Milepost Span	Land Use Feature	Direction From Route	Distance From Route (Ft)
Route 8G (cont.)	22	Building or Other Structure	N	270
	22	Building or Other Structure	N	297
	22	Building or Other Structure	N	255
	22	Residence	N	401
	22.1	Pivot	SW	377
	22.2	Building or Other Structure	N	861
	22.3	Building or Other Structure	N	593
	22.3	Building or Other Structure	N	579
	22.3	Building or Other Structure	SW	458
	22.3	CAFO or Animal Pen	S	381
	22.3	Residence	N	584
	22.4	Building or Other Structure	NE	656
	22.4	Building or Other Structure	N	612
	22.4	Building or Other Structure	SE	466
	22.4	Residence	S	578
	22.5	Building or Other Structure	N	942
	22.6	Residence	NE	795
	22.6	Residence	N	471
	22.7	Building or Other Structure	NE	739
	22.7	Building or Other Structure	N	270
	22.7	Building or Other Structure	N	369
	22.7	North Alternate Oregon Trail	Crossed	Crossed
	22.7	Residence	NE	328
	22.7	Residence	N	349
	22.8	Building or Other Structure	N	342
	23	Residence	NE	366
	23.1	Building or Other Structure	N	973
	23.1	Building or Other Structure	N	867
	23.1	Residence	N	419
	23.1	Residence	N	970
	23.2	Residence	S	728
	23.2 - 23.4	Pivot	Crossed	Crossed
	23.6	Building or Other Structure	SW	685
	23.7	Building or Other Structure	NW	301
	23.7	Building or Other Structure	W	251
	23.7	Residence	S	982
	23.7	Residence	S	756
	23.8	Building or Other Structure	NE	191
	23.8	Residence	NE	311
	23.8	Residence	N	698
	23.8	Residence	S	499
	23.9	Building or Other Structure	N	733
	23.9 - 24.0	Pivot	Crossed	Crossed
	24.1	Building or Other Structure	S	974
	24.1	Pivot	N	305
	24.2	Building or Other Structure	SW	862
	24.2 - 25.0	MUA-8 Hagerman Fossil Beds	Crossed	Crossed
	24.3	Building or Other Structure	N	457
	24.4	Building or Other Structure	NE	831
	24.4	Building or Other Structure	NE	936
	25.0 - 52.5	MUA-7 Saylor Creek East	Crossed	Crossed
	26.8	Building or Other Structure	N	497

**Table D.17-1.** Specific Land Uses Crossed or within 1,000 Feet of Proposed Routes and Other Routes cont.

Route Name	Closest Milepost or Milepost Span	Land Use Feature	Direction From Route	Distance From Route (Ft)
Route 8G (cont.)	26.8	Building or Other Structure	NW	303
	26.9	Building or Other Structure	NE	440
	26.9	Wind Turbine	N	537
	27.9	Building or Other Structure	N	347
	27.9	Building or Other Structure	NW	295
	28	Building or Other Structure	NE	221
	28	Building or Other Structure	NW	233
	28	Residence	NW	223
	28.1	Building or Other Structure	NE	208
	29	Wind Turbine	S	895
	33.3	Oregon NHT	Crossed	Crossed
	33.3 - 33.6	Oregon Trail SRMA	Crossed	Crossed
	34.0 - 35.0	State Endowment Land	Crossed	Crossed
	38.2 - 45.0	Saylor Creek HMA	Crossed	Crossed
	40.0 - 41.0	State Endowment Land	Crossed	Crossed
	41	Gravel Pit	S	538
	48.6 - 48.9	Pivot	Crossed	Crossed
	49.8	Pivot	N	931
	50	Building or Other Structure	SE	151
	50.3	Pivot	N	921
	50.7	Pivot	N	982
	52.5 - 59.6	MUA-6 Saylor Creek West	Crossed	Crossed
	58.1 - 59.4	Pivot	Crossed	Crossed
	59.5 - 69.4	Snake River Birds of Prey IBA	Crossed	Crossed
	59.5 - 69.4	Snake River Birds of Prey NCA	Crossed	Crossed
	62.8 - 67.1	Saylor Creek Range	Crossed	Crossed
	65.5 - 66.7	State Endowment Land	Crossed	Crossed
	69.3 - 72.9	MUA-6 Saylor Creek West	Crossed	Crossed
	71.4	Pivot	W	304
	72.5	Dam	SE	156
	76.9 - 77.9	State Endowment Land	Crossed	Crossed
	82.9 - 83.9	State Endowment Land	Crossed	Crossed
	96.9 - 98.1	State Endowment Land	Crossed	Crossed
	112.9	Building or Other Structure	NE	651
	113	Building or Other Structure	NE	698
	113	Residence	NE	716
	113.1	Building or Other Structure	NE	707
	113.1	Building or Other Structure	NE	751
	113.1	Building or Other Structure	NE	669
	113.1	CAFO or Animal Pen	NE	386
	113.6	Building or Other Structure	NE	154
	113.6	Building or Other Structure	N	485
	113.6	Building or Other Structure	NW	154
	113.6	CAFO or Animal Pen	N	371
	113.7	Dam	SW	515
	126.1 - 126.2	State Endowment Land	Crossed	Crossed
	134.9 - 144.4	Black Mountain HMA	Crossed	Crossed
	140.2 - 141.4	State Endowment Land	Crossed	Crossed
	144.2	Residence	W	812
	144.3	Building or Other Structure	W	464
	144.3	Building or Other Structure	W	763
	144.3	Building or Other Structure	W	994

Table D.17-1. Specific Land Uses Crossed or within 1,000 Feet of Proposed Routes and Other Routes cont.

Route Name	Closest Milepost or Milepost Span	Land Use Feature	Direction From Route	Distance From Route (Ft)
Route 8G (cont.)	144.3	Building or Other Structure	W	754
	144.3	Building or Other Structure	W	856
	144.3	Building or Other Structure	W	660
	144.3	Building or Other Structure	W	756
	144.3	Building or Other Structure	W	609
	144.3	Residence	NW	504
	144.3	Residence	W	964
	144.3	Residence	W	970
	144.3	Residence	W	819
	144.4	Building or Other Structure	W	965
	144.4	Building or Other Structure	W	849
	144.4	Residence	W	975
	144.5	Building or Other Structure	E	297
	144.5	Building or Other Structure	NE	429
	144.5	Building or Other Structure	W	910
	144.5	Building or Other Structure	W	957
	144.5	Building or Other Structure	W	585
	144.5	Building or Other Structure	E	405
	144.5	Building or Other Structure	E	368
	144.5	Building or Other Structure	E	953
	144.5	Residence	E	367
	144.5	Residence	W	970
	144.5	Residence	W	733
	144.5	Residence	E	965
	144.6	Building or Other Structure	E	777
	144.6	Building or Other Structure	E	411
	144.6	Building or Other Structure	E	485
	144.6	Residence	E	566
	144.6	Residence	W	996
	144.6	Residence	E	818
	144.7	Building or Other Structure	SW	644
	144.7	Building or Other Structure	SW	543
	144.7	Residence	W	572
	144.8	Building or Other Structure	SW	666
	144.8	CAFO or Animal Pen	SW	914
Route 8G (Rebuild)	1.2	Building or Other Structure	S	768
	1.3	Building or Other Structure	SE	218
Route 8H	1.6	Pivot	N	378
	1.8	Pivot	N	406
	1.8 - 2.3	Pivot	Crossed	Crossed
	2.2	Pivot	N	813
	2.3	Pivot	S	47
	2.5 - 3.0	Pivot	Crossed	Crossed
	2.6	Pivot	S	288
	3	Pivot	S	278
	3.2 - 3.5	Pivot	Crossed	Crossed
	3.4	Pivot	S	235
	3.7 - 3.8	Pivot	Crossed	Crossed
	3.8	Pivot	S	373
	4	Building or Other Structure	W	234
	4	Building or Other Structure	W	244

**Table D.17-1.** Specific Land Uses Crossed or within 1,000 Feet of Proposed Routes and Other Routes cont.

Route Name	Closest Milepost or Milepost Span	Land Use Feature	Direction From Route	Distance From Route (Ft)
Route 8H (cont.)	4	Building or Other Structure	SW	442
	4	Building or Other Structure	S	394
	4	Building or Other Structure	S	414
	4	Pivot	N	455
	4.1	Building or Other Structure	SE	215
	4.1	CAFO or Animal Pen	SE	154
	5.5	Pivot	S	897
	8.3 - 9.3	State Endowment Land	Crossed	Crossed
	14.4 - 19.4	State Endowment Land	Crossed	Crossed
	15.2 - 15.5	Pivot	Crossed	Crossed
	15.4	Pivot	S	856
	15.6	Pivot	N	658
	16.2	Pivot	N	537
	16.4	Pivot	N	595
	17.4	Pivot	N	402
	19.8 - 20.0	Pivot	Crossed	Crossed
	20.4	Pivot	N	523
	20.6	Building or Other Structure	N	611
	20.6	Building or Other Structure	N	657
	20.6	Residence	N	352
	20.7	Building or Other Structure	NE	585
	20.7	Pivot	S	743
	20.8	North Side Alternate Trail	Crossed	Crossed
	20.8	Pivot	N	565
	21	Pivot	N	474
	21.1	Building or Other Structure	N	190
	21.1	Building or Other Structure	N	368
	21.1	Building or Other Structure	N	279
	21.1	Residence	N	388
	21.1	Residence	S	543
	21.2	Residence	N	676
	21.4	Pivot	N	559
	21.4	Pivot	S	669
	21.5	Pivot	N	539
	21.6	Building or Other Structure	S	444
	21.6	Building or Other Structure	S	875
	21.6	Building or Other Structure	S	812
	21.6	Building or Other Structure	S	872
	21.6	CAFO or Animal Pen	S	577
	21.6	Residence	S	939
	21.7	Building or Other Structure	N	953
	21.7	Pivot	SE	41
	21.7	Residence	N	953
	21.9	Building or Other Structure	N	798
	21.9	Building or Other Structure	N	771
	21.9	CAFO or Animal Pen	NW	61
	21.9	Pivot	N	513
	21.9	Residence	NE	314
	21.9	Residence	N	629
	22	Building or Other Structure	NE	281
	22	Building or Other Structure	N	270

**Table D.17-1.** Specific Land Uses Crossed or within 1,000 Feet of Proposed Routes and Other Routes cont.

Route Name	Closest Milepost or Milepost Span	Land Use Feature	Direction From Route	Distance From Route (Ft)
Route 8H (cont.)	22	Building or Other Structure	N	297
	22	Building or Other Structure	N	255
	22	Residence	N	401
	22.1	Pivot	SW	377
	22.2	Building or Other Structure	N	861
	22.3	Building or Other Structure	N	593
	22.3	Building or Other Structure	N	579
	22.3	Building or Other Structure	SW	458
	22.3	CAFO or Animal Pen	S	381
	22.3	Residence	N	584
	22.4	Building or Other Structure	NE	656
	22.4	Building or Other Structure	N	612
	22.4	Building or Other Structure	SE	466
	22.4	Residence	S	578
	22.5	Building or Other Structure	N	942
	22.6	Residence	NE	795
	22.6	Residence	N	471
	22.7	Building or Other Structure	NE	739
	22.7	Building or Other Structure	N	270
	22.7	Building or Other Structure	N	369
	22.7	North Alternate Oregon Trail	Crossed	Crossed
	22.7	Residence	NE	328
	22.7	Residence	N	349
	22.8	Building or Other Structure	N	342
	23	Residence	NE	366
	23.1	Building or Other Structure	N	973
	23.1	Building or Other Structure	N	867
	23.1	Residence	N	419
	23.1	Residence	N	970
	23.2	Residence	S	728
	23.2 - 23.4	Pivot	Crossed	Crossed
	23.6	Building or Other Structure	SW	685
	23.7	Building or Other Structure	NW	301
	23.7	Building or Other Structure	W	251
	23.7	Residence	S	982
	23.7	Residence	S	756
	23.8	Building or Other Structure	NE	191
	23.8	Residence	NE	311
	23.8	Residence	N	698
	23.8	Residence	S	499
	23.9	Building or Other Structure	N	733
	23.9 - 24.0	Pivot	Crossed	Crossed
	24.1	Building or Other Structure	S	974
	24.1	Pivot	N	305
	24.2	Building or Other Structure	SW	862
	24.2 - 25.0	MUA-8 Hagerman Fossil Beds	Crossed	Crossed
	24.3	Building or Other Structure	N	457
	24.4	Building or Other Structure	NE	831
	24.4	Building or Other Structure	NE	936
	25.0 - 52.5	MUA-7 Saylor Creek East	Crossed	Crossed
	26.8	Building or Other Structure	N	497

**Table D.17-1.** Specific Land Uses Crossed or within 1,000 Feet of Proposed Routes and Other Routes cont.

Route Name	Closest Milepost or Milepost Span	Land Use Feature	Direction From Route	Distance From Route (Ft)
Route 8H (cont.)	26.8	Building or Other Structure	NW	303
	26.9	Building or Other Structure	NE	440
	26.9	Wind Turbine	N	537
	27.9	Building or Other Structure	N	347
	27.9	Building or Other Structure	NW	295
	28	Building or Other Structure	NE	221
	28	Building or Other Structure	NW	233
	28	Residence	NW	223
	28.1	Building or Other Structure	NE	208
	29	Wind Turbine	S	895
	33.3	Oregon NHT	Crossed	Crossed
	33.3 - 33.6	Oregon Trail SRMA	Crossed	Crossed
	34.0 - 35.0	State Endowment Land	Crossed	Crossed
	38.2 - 45.0	Saylor Creek HMA	Crossed	Crossed
	40.0 - 41.0	State Endowment Land	Crossed	Crossed
	41	Gravel Pit	S	538
	48.6 - 48.9	Pivot	Crossed	Crossed
	49.8	Pivot	N	931
	50	Building or Other Structure	SE	151
	50.3	Pivot	N	921
	50.7	Pivot	N	982
	52.5 - 59.6	MUA-6 Saylor Creek West	Crossed	Crossed
	58.1 - 59.4	Pivot	Crossed	Crossed
	59.5 - 69.4	Snake River Birds of Prey IBA	Crossed	Crossed
	59.5 - 69.4	Snake River Birds of Prey NCA	Crossed	Crossed
	62.8 - 67.1	Saylor Creek Range	Crossed	Crossed
	65.5 - 66.7	State Endowment Land	Crossed	Crossed
	69.3 - 72.9	MUA-6 Saylor Creek West	Crossed	Crossed
	72.5	Dam	SE	156
	73.9 - 76.5	MUA-6 Saylor Creek West	Crossed	Crossed
	74.8	CAFO or Animal Pen	N	238
	76.4 - 82.0	C.J. Strike SRMA	Crossed	Crossed
	76.9 - 77.9	State Endowment Land	Crossed	Crossed
	77.3 - 81.8	Snake River Birds of Prey NCA	Crossed	Crossed
	78.0 - 78.2	CAFO or Animal Pen	Crossed	Crossed
	78.7 - 79.0	CAFO or Animal Pen	Crossed	Crossed
	79.2	CAFO or Animal Pen	N	266
	79.3	CAFO or Animal Pen	S	264
	80	CAFO or Animal Pen	W	248
	80.2 - 81.5	C.J. Strike SRMA	Crossed	Crossed
	80.6 - 80.8	State Endowment Land	Crossed	Crossed
	81.9 - 82	Oregon Trail SRMA	Crossed	Crossed
	81.9 - 82.1, 82.4 - 82.9	C.J. Strike WMA/Reservoir	Crossed	Crossed
	82.1	CAFO or Animal Pen	S	89
	82.8 - 83.6	Snake River Birds of Prey NCA	Crossed	Crossed
	82.9 - 83.9	State Endowment Land	Crossed	Crossed
	83.2 - 84.1	C.J. Strike WMA/Reservoir	Crossed	Crossed
	84.3 - 84.6	C.J. Strike WMA/Reservoir	Crossed	Crossed
	84.9 - 118.5	Snake River Birds of Prey IBA/NCA	Crossed	Crossed
	87.3 - 88	State Endowment Land	Crossed	Crossed
	89.3	CAFO or Animal Pen	NE	819

**Table D.17-1.** Specific Land Uses Crossed or within 1,000 Feet of Proposed Routes and Other Routes cont.

Route Name	Closest Milepost or Milepost Span	Land Use Feature	Direction From Route	Distance From Route (Ft)
Route 8H (cont.)	90.3	CAFO or Animal Pen	E	360
	92.1 - 92.2	State Endowment Land	Crossed	Crossed
	96.3 - 98.2	State Endowment Land	Crossed	Crossed
	98.2 - 107.1	Orchard Combat Training Center	Crossed	Crossed
	100.0 - 101.2	State Endowment Land	Crossed	Crossed
	112.9	Building or Other Structure	NE	651
	113	Building or Other Structure	NE	698
	113	Residence	NE	716
	113.1	Building or Other Structure	NE	707
	113.1	Building or Other Structure	NE	751
	113.1	Building or Other Structure	NE	669
	113.1	CAFO or Animal Pen	NE	386
	113.1 - 115	Guffey Butte/Black Butte Archaeological District	Crossed	Crossed
	113.6	Building or Other Structure	NE	154
	113.6	Building or Other Structure	N	485
	113.6	Building or Other Structure	NW	154
	113.6	CAFO or Animal Pen	N	371
	113.7	Dam	SW	515
	113.9 - 115.1	Snake River Canyon SRMA	Crossed	Crossed
	114.5 - 118.3	Birds of Prey Avoidance Area	Crossed	Crossed
	118.2	CAFO or Animal Pen	NE	466
	123.3 - 123.4	Oregon Trail SRMA	Crossed	Crossed
	124.7 - 134.4	Black Mountain HMA	Crossed	Crossed
	130.3 - 131.5	State Endowment Land	Crossed	Crossed
	134.9 - 144.4	Black Mountain HMA	Crossed	Crossed
Route 8H (Rebuild)	0.3	Wind Farm	N	784
	1.3	Building or Other Structure	SE	218
Segment 9 Revised Proposed Route	0	Pivot	NE	200
	0.0 - 8.3	South Hill IBA	Crossed	Crossed
	0.1	Pivot	W	822
	0.5 - 1.1	Pivot	Crossed	Crossed
	0.6	Pivot	N	962
	0.6	Pivot	S	296
	1.3	Pivot	S	285
	1.3 - 1.7	Pivot	Crossed	Crossed
	1.9	Pivot	S	64
	1.9 - 2.0	Pivot	Crossed	Crossed
	2.2	Building or Other Structure	S	323
	2.2	Residence	SE	169
	4.9	Building or Other Structure	NW	753
	5	Building or Other Structure	N	935
	5	CAFO or Animal Pen	N	724
	5.2	Pivot	N	843
	5.3	Gravel Pit	S	461
	5.6	Park or Recreation Area	N	654
	6.4	Pivot	N	302
	6.5	Building or Other Structure	NE	300
	6.5	Building or Other Structure	S	719
	6.5	CAFO or Animal Pen	SE	589
	6.5	Residence	N	435
	8.9	Dam	S	301



**Table D.17-1.** Specific Land Uses Crossed or within 1,000 Feet of Proposed Routes and Other Routes cont.

Route Name	Closest Milepost or Milepost Span	Land Use Feature	Direction From Route	Distance From Route (Ft)
Segment 9 Revised Proposed Route (cont.)	12.7	Building or Other Structure	SW	140
	12.7	Building or Other Structure	S	425
	12.7	Building or Other Structure	S	68
	17.3	Pivot	S	400
	32.6	Building or Other Structure	NE	971
	33.3 - 33.6	Salmon Falls Creek Canyon ACEC	Crossed	Crossed
	33.3 - 36.0	MUA-14 Salmon Falls Creek ACEC	Crossed	Crossed
	36.0 - 38.0	MUA-13 East Devil	Crossed	Crossed
	36.7 - 37.8	State Endowment Land	Crossed	Crossed
	38.0 - 47.2	MUA-12 West Devil	Crossed	Crossed
	38.7	Toana Freight Wagon Road	Crossed	Crossed
	46.5 - 54.4	Jarbidge Military Operations Area	Crossed	Crossed
	47.1 - 81.2	MUA-7 Saylor Creek East	Crossed	Crossed
	48.7	Pivot	E	151
	51.8	Building or Other Structure	W	766
	51.9	CAFO or Animal Pen	W	917
	60.3 - 73.3	Saylor Creek HMA	Crossed	Crossed
	62.7	Dam	SW	928
	77.2 - 77.6	Pivot	Crossed	Crossed
	78.6	Building or Other Structure	N	206
	81.1 - 88.3	MUA-6 Saylor Creek West	Crossed	Crossed
	86.7	Pivot	N	54
	87.2 - 88.1	Pivot	Crossed	Crossed
	88.1 - 102.3	Snake River Birds of Prey IBA	Crossed	Crossed
	88.1 - 102.3	Snake River Birds of Prey NCA	Crossed	Crossed
	91.3 - 95.7	Saylor Creek Range	Crossed	Crossed
	94.2 - 95.3	State Endowment Land	Crossed	Crossed
	102.5 - 105.1	MUA-6 Saylor Creek West	Crossed	Crossed
	103.5	Pivot	N	198
	104.1	Oregon NHT	Crossed	Crossed
	105.1 - 105.4	Snake River Birds of Prey IBA	Crossed	Crossed
	105.1 - 105.4	Snake River Birds of Prey NCA	Crossed	Crossed
	105.1 - 105.7	C.J. Strike SRMA	Crossed	Crossed
	105.5 - 106.3	MUA-6 Saylor Creek West	Crossed	Crossed
	105.9 - 110.7	C.J. Strike SRMA	Crossed	Crossed
	105.9 - 112.2	Snake River Birds of Prey IBA	Crossed	Crossed
	105.9 - 112.2	Snake River Birds of Prey NCA	Crossed	Crossed
	106.7 - 106.8	Pivot	Crossed	Crossed
	106.9	Pivot	S	829
	107.4 - 107.6	Pivot	Crossed	Crossed
	107.5	Pivot	N	215
	107.9	Pivot	N	181
	108	Pivot	S	260
	108.8 - 109.5	C.J. Strike Reservoir SRMA	Crossed	Crossed
	108.8 - 110.1	CJ Strike WMA/Reservoir	Crossed	Crossed
	109.3 - 109.5	State Endowment Land	Crossed	Crossed
	109.6 - 110.1	C.J. Strike Reservoir SRMA	Crossed	Crossed
	110.5	Oregon NHT	Crossed	Crossed
	110.5 - 110.6	Oregon Trail SRMA	Crossed	Crossed

**Table D.17-1.** Specific Land Uses Crossed or within 1,000 Feet of Proposed Routes and Other Routes cont.

Route Name	Closest Milepost or Milepost Span	Land Use Feature	Direction From Route	Distance From Route (Ft)
Segment 9 Revised Proposed Route (cont.)	110.5 - 110.8	CJ Strike WMA/Reservoir	Crossed	Crossed
	110.5 - 110.8	Cove Recreation Site	Crossed	Crossed
	110.8	Pivot	S	51
	111.0 - 111.6	CJ Strike WMA/Reservoir	Crossed	Crossed
	111.4 - 111.6	C.J. Strike Reservoir SRMA	Crossed	Crossed
	111.6 - 112.2	C.J. Strike SRMA	Crossed	Crossed
	111.8 - 112.2	C.J. Strike Reservoir SRMA	Crossed	Crossed
	111.8 - 112.7	CJ Strike WMA/Reservoir	Crossed	Crossed
	112.8	Oregon NHT	Crossed	Crossed
	113.0 - 113.2	CJ Strike WMA/Reservoir	Crossed	Crossed
	113.5 - 147.0	Snake River Birds of Prey IBA	Crossed	Crossed
	113.5 - 147.0	Snake River Birds of Prey NCA	Crossed	Crossed
	114.5	Building or Other Structure	NE	369
	116.0 - 116.7	State Endowment Land	Crossed	Crossed
	116.4	Mountain Home AFB Class D Airspace	NE	62
	117.9	Pivot	N	825
	119	Pivot	E	372
	120.7 - 120.9	State Endowment Land	Crossed	Crossed
	125.0 - 126.9	State Endowment Land	Crossed	Crossed
	128.7 - 129.8	State Endowment Land	Crossed	Crossed
	140.9 - 141.0	Guffey Butte/Black Butte Archaeological District	Crossed	Crossed
	141.8 - 143.7	Guffey Butte/Black Butte Archaeological District	Crossed	Crossed
	142.5 - 143.8	Snake River Canyon SRMA	Crossed	Crossed
	143.1 - 147.0	Birds of Prey Avoidance Area	Crossed	Crossed
	146.8	Pivot	N	450
	147.7 - 153.3	Birds of Prey Avoidance Area	Crossed	Crossed
	147.7 - 154.5	Snake River Birds of Prey IBA	Crossed	Crossed
	147.7 - 154.5	Snake River Birds of Prey NCA	Crossed	Crossed
	151.9 - 152.1	Oregon Trail SRMA	Crossed	Crossed
	152	Oregon NHT	Crossed	Crossed
	153.3 - 154.5	Owyhee Front SRMA	Crossed	Crossed
	153.3 - 162.9	Black Mountain HMA	Crossed	Crossed
	159.0 - 160.2	State Endowment Land	Crossed	Crossed
	162.8	Claypit	SE	177
	163	Pivot	SW	151
	163	Residence	NE	570
	163.1	Residence	E	601
	163.3	Residence	SE	809
	163.3	Residence	E	800
	163.4	Residence	SE	588
	163.5	Building or Other Structure	SE	823
	163.5	Residence	SE	775
	163.6	Residence	S	283
	163.7	Residence	SE	953
	163.8	Building or Other Structure	NW	845
	163.8	Building or Other Structure	NW	936

**Table D.17-1.** Specific Land Uses Crossed or within 1,000 Feet of Proposed Routes and Other Routes cont.

Route Name	Closest Milepost or Milepost Span	Land Use Feature	Direction From Route	Distance From Route (Ft)
Segment 9 Proposed - Existing 138-kV Removal <sup>1/</sup>	106.1 - 109.4	C.J. Strike SRMA	Crossed	Crossed
	106.1 - 109.4	Snake River Birds of Prey IBA	Crossed	Crossed
	106.1 - 109.4	Snake River Birds of Prey NCA	Crossed	Crossed
	106.2 - 106.3	MUA-6 Saylor Creek West	Crossed	Crossed
	108.7 - 109.4	C.J. Strike Reservoir SRMA	Crossed	Crossed
	108.7 - 109.4	CJ Strike WMA/Reservoir	Crossed	Crossed
	109.3 - 109.4	State Endowment Land	Crossed	Crossed
	109.9 - 110.1	C.J. Strike Reservoir SRMA	Crossed	Crossed
	109.9 - 110.1	CJ Strike WMA/Reservoir	Crossed	Crossed
	109.9 - 110.7	C.J. Strike SRMA	Crossed	Crossed
	109.9 - 112.0	Snake River Birds of Prey IBA	Crossed	Crossed
	109.9 - 112.0	Snake River Birds of Prey NCA	Crossed	Crossed
	110.5 - 110.6	Oregon Trail SRMA	Crossed	Crossed
	110.5 - 110.8	CJ Strike WMA/Reservoir	Crossed	Crossed
	110.5 - 110.8	Cove Recreation Site	Crossed	Crossed
	111.0 - 111.6	CJ Strike WMA/Reservoir	Crossed	Crossed
	111.4 - 111.6	C.J. Strike Reservoir SRMA	Crossed	Crossed
	111.5 - 112.0	C.J. Strike SRMA	Crossed	Crossed
	111.8 - 112.0	C.J. Strike Reservoir SRMA	Crossed	Crossed
	111.8 - 112.0	CJ Strike WMA/Reservoir	Crossed	Crossed
	120.9 - 141.2	Snake River Birds of Prey IBA	Crossed	Crossed
	120.9 - 141.2	Snake River Birds of Prey NCA	Crossed	Crossed
	124.9 - 126.8	State Endowment Land	Crossed	Crossed
	128.7 - 129.9	State Endowment Land	Crossed	Crossed
Segment 9 FEIS Proposed Route	0	Pivot	NE	200
	0.0 - 8.3	South Hill IBA	Crossed	Crossed
	0.1	Pivot	W	822
	0.5 - 1.1	Pivot	Crossed	Crossed
	0.6	Pivot	N	962
	0.6	Pivot	S	296
	1.3	Pivot	S	285
	1.3 - 1.7	Pivot	Crossed	Crossed
	1.9	Pivot	S	64
	1.9 - 2.0	Pivot	Crossed	Crossed
	2.2	Building or Other Structure	S	323
	2.2	Residence	SE	169
	3.9	Gravel Pit	N	650
	6.4	Pivot	N	302
	6.5	Building or Other Structure	NE	300
	6.5	Building or Other Structure	S	719
	6.5	CAFO or Animal Pen	SE	589
	6.5	Residence	N	435
	8.9	Dam	S	301
	12.7	Building or Other Structure	S	425
	12.7	Building or Other Structure	S	68
	17.3	Pivot	S	400
	32.6	Building or Other Structure	NE	971
	33.3 - 33.6	Salmon Falls Creek Canyon ACEC	Crossed	Crossed
	33.3 - 36.0	MUA-14 Salmon Falls Creek ACEC	Crossed	Crossed
	36.0 - 38.0	MUA-13 East Devil	Crossed	Crossed
	36.7 - 37.8	State Endowment Land	Crossed	Crossed

**Table D.17-1.** Specific Land Uses Crossed or within 1,000 Feet of Proposed Routes and Other Routes cont.

Route Name	Closest Milepost or Milepost Span	Land Use Feature	Direction From Route	Distance From Route (Ft)
Segment 9 FEIS Proposed Route (cont.)	38.0 - 47.2	MUA-12 West Devil	Crossed	Crossed
	38.7	Toana Freight Wagon Road	Crossed	Crossed
	46.5 - 54.4	Jarbridge Military Operations Area	Crossed	Crossed
	47.1 - 81.2	MUA-7 Saylor Creek East	Crossed	Crossed
	48.7	Pivot	E	151
	51.8	Building or Other Structure	W	766
	51.9	CAFO or Animal Pen	W	917
	60.3 - 73.3	Saylor Creek HMA	Crossed	Crossed
	62.7	Dam	SW	928
	77.2 - 77.6	Pivot	Crossed	Crossed
	78.6	Building or Other Structure	N	206
	81.2 - 88.3	MUA-6 Saylor Creek West	Crossed	Crossed
	86.7	Pivot	N	54
	87.2 - 88.1	Pivot	Crossed	Crossed
	88.1 - 102.3	Snake River Birds of Prey IBA	Crossed	Crossed
	88.1 - 102.3	Snake River Birds of Prey NCA	Crossed	Crossed
	91.3 - 95.7	Saylor Creek Range	Crossed	Crossed
	94.2 - 95.3	State Endowment Land	Crossed	Crossed
	97.2 - 99.2	MUA-6 Saylor Creek West	Crossed	Crossed
	97.9	Residence	NW	366
	98.4 - 99.7	Ducks Unlimited Project Area	Crossed	Crossed
	99.4	Residence	NW	544
	99.4	Residence	NW	743
	99.6	Cemetary	SE	385
	99.7	Cemetary	S	400
	100	CAFO or Animal Pen	SW	577
	100.7 - 101.3	CAFO or Animal Pen	Crossed	Crossed
	102.5 - 105.1	MUA-6 Saylor Creek West	Crossed	Crossed
	104.1	Oregon NHT	Crossed	Crossed
	108.7	Pivot	SW	885
	108.7	CAFO or Animal Pen	SW	887
	109.5 - 109.9	CAFO or Animal Pen	Crossed	Crossed
	110.2	CAFO or Animal Pen	Crossed	Crossed
	110.2	CAFO or Animal Pen	N	36
	110.5	Residence	N	310
	110.7	CAFO or Animal Pen	Crossed	Crossed
	111.3	CAFO or Animal Pen	N	49
	112.4 - 112.6	CAFO or Animal Pen	Crossed	Crossed
	112.9	CAFO or Animal Pen	NE	741
	113.6 - 113.8	CAFO or Animal Pen	Crossed	Crossed
	113.7	CAFO or Animal Pen	SW	461
	114.9	CAFO or Animal Pen	SW	747
	115.7	CAFO or Animal Pen	N	238
	116	CAFO or Animal Pen	SW	335
	116.3	CAFO or Animal Pen	NE	231
	116.6	CAFO or Animal Pen	NE	978
	117	CAFO or Animal Pen	SW	520
	117.8	CAFO or Animal Pen	S	266
	118.3	CAFO or Animal Pen	Crossed	Crossed
	118.6	CAFO or Animal Pen	S	34
	118.7	CAFO or Animal Pen	N	80

**Table D.17-1.** Specific Land Uses Crossed or within 1,000 Feet of Proposed Routes and Other Routes cont.

Route Name	Closest Milepost or Milepost Span	Land Use Feature	Direction From Route	Distance From Route (Ft)
Segment 9 FEIS Proposed Route (cont.)	119.2	CAFO or Animal Pen	S	70
	119.2	CAFO or Animal Pen	SW	458
	119.4 - 119.5	CAFO or Animal Pen	Crossed	Crossed
	119.6	CAFO or Animal Pen	SW	414
	119.6 - 119.8	CAFO or Animal Pen	Crossed	Crossed
	119.8	Residence	SW	186
	119.8	CAFO or Animal Pen	SW	578
	120.2 - 120.3	CAFO or Animal Pen	Crossed	Crossed
	120.4 - 120.5	CAFO or Animal Pen	Crossed	Crossed
	121	CAFO or Animal Pen	NE	722
	122.9 - 123.3	CAFO or Animal Pen	Crossed	Crossed
	123.3	CAFO or Animal Pen	N	290
	126.3 - 127.4	State Endowment Land	Crossed	Crossed
	131.9	Residence	N	463
	132	Residence	NE	448
	132.6	Residence	S	164
	134.9	Residence	N	83
	135.4 - 135.7	CAFO or Animal Pen	Crossed	Crossed
	135.9	CAFO or Animal Pen	SW	506
	136.5	Residence	SW	969
	142.5 - 146.3	Owyhee Front SRMA	Crossed	Crossed
	142.5 - 146.4	Snake River Birds of Prey NCA	Crossed	Crossed
	142.5 - 146.5	Snake River Birds of Prey IBA	Crossed	Crossed
	151.1	Residence	NE	766
	151.1	Residence	NE	866
	151.5 - 152.6	Owyhee Front SRMA	Crossed	Crossed
	151.5 - 152.7	Snake River Birds of Prey NCA	Crossed	Crossed
	151.5 - 152.8	Snake River Birds of Prey IBA	Crossed	Crossed
	151.7 - 161.1	Black Mountain HMA	Crossed	Crossed
	157.2 - 158.4	State Endowment Land	Crossed	Crossed
	161	Claypit	NE	164
	161.2	Pivot	SW	138
	161.3	Residence	E	566
	161.3	Residence	NE	586
	161.4	Residence	NE	780
	161.5	Residence	E	880
	161.6	Residence	SE	603
	161.7	Building or Other Structure	SE	776
	161.8	Residence	SE	156
	161.8	Residence	SE	966
	163.8	Building or Other Structure	NW	845
Route 9K	0	Pivot	NE	200
	0.0 - 8.3	South Hill IBA	Crossed	Crossed
	0.1	Pivot	W	822
	0.5 - 1.1	Pivot	Crossed	Crossed
	0.6	Pivot	N	962
	0.6	Pivot	S	296
	1.3	Pivot	S	285
	1.3 - 1.7	Pivot	Crossed	Crossed
	1.9	Pivot	S	64
	1.9 - 2.0	Pivot	Crossed	Crossed

**Table D.17-1.** Specific Land Uses Crossed or within 1,000 Feet of Proposed Routes and Other Routes cont.

Route Name	Closest Milepost or Milepost Span	Land Use Feature	Direction From Route	Distance From Route (Ft)
Route 9K (cont.)	2.2	Building or Other Structure	S	323
	2.2	Residence	SE	169
	4.9	Building or Other Structure	NW	753
	5	Building or Other Structure	N	935
	5	CAFO or Animal Pen	N	724
	5.2	Pivot	N	843
	5.3	Gravel Pit	S	461
	5.6	Park or Recreation Area	N	654
	6.4	Pivot	N	302
	6.5	Building or Other Structure	NE	300
	6.5	Building or Other Structure	S	719
	6.5	CAFO or Animal Pen	SE	589
	6.5	Residence	N	435
	8.9	Dam	S	301
	12.7	Building or Other Structure	SW	140
	12.7	Building or Other Structure	S	425
	12.7	Building or Other Structure	S	68
	17.3	Pivot	S	400
	32.6	Building or Other Structure	NE	971
	33.3 - 33.6	Salmon Falls Creek Canyon ACEC	Crossed	Crossed
	33.3 - 36.0	MUA-14 Salmon Falls Creek ACEC	Crossed	Crossed
	36.0 - 38.0	MUA-13 East Devil	Crossed	Crossed
	36.7 - 37.8	State Endowment Land	Crossed	Crossed
	38.0 - 47.1	MUA-12 West Devil	Crossed	Crossed
	38.7	Toana Freight Wagon Road	Crossed	Crossed
	46.5 - 54.4	Jarbidge Military Operations Area	Crossed	Crossed
	47.1 - 81.1	MUA-7 Saylor Creek East	Crossed	Crossed
	48.7	Pivot	E	151
	51.8	Building or Other Structure	W	766
	51.9	CAFO or Animal Pen	W	917
	60.3 - 73.3	Saylor Creek HMA	Crossed	Crossed
	62.7	Dam	SW	928
	77.2 - 77.6	Pivot	Crossed	Crossed
	78.6	Building or Other Structure	N	206
	81.1 - 88.3	MUA-6 Saylor Creek West	Crossed	Crossed
	86.7	Pivot	N	54
	87.2 - 88.1	Pivot	Crossed	Crossed
	88.1 - 98.0	Snake River Birds of Prey IBA	Crossed	Crossed
	88.1 - 98.0	Snake River Birds of Prey NCA	Crossed	Crossed
	91.3 - 95.7	Saylor Creek Range	Crossed	Crossed
	94.2 - 95.3	State Endowment Land	Crossed	Crossed
	97.8 - 101.6	MUA-6 Saylor Creek West	Crossed	Crossed
	100	Pivot	W	551
	101.1	Dam	NW	139
	101.4	Dam	S	862
	125.6 - 126.8	State Endowment Land	Crossed	Crossed
	141.6	Building or Other Structure	NE	917
	141.6	Building or Other Structure	NE	913
	141.6	Residence	N	961
	141.7	Building or Other Structure	NE	917

**Table D.17-1.** Specific Land Uses Crossed or within 1,000 Feet of Proposed Routes and Other Routes cont.

Route Name	Closest Milepost or Milepost Span	Land Use Feature	Direction From Route	Distance From Route (Ft)
Route 9K (cont.)	141.7	Building or Other Structure	N	990
	141.7	Building or Other Structure	N	936
	141.7	CAFO or Animal Pen	N	604
	142.2	Building or Other Structure	N	453
	142.3	Building or Other Structure	NE	298
	142.3	Building or Other Structure	NE	728
	142.3	CAFO or Animal Pen	NE	553
	142.4	Dam	S	293
	163.5 - 172.9	Black Mountain HMA	Crossed	Crossed
	168.9 - 170.2	State Endowment Land	Crossed	Crossed
	172.8	Claypit	SE	266
	172.9	Pivot	W	172
	173	Residence	NE	553
	173.1	Residence	NE	787
	173.1	Residence	E	634
	173.3	Residence	E	787
	173.4	Building or Other Structure	E	810
	173.4	Residence	SE	620
	173.4	Residence	E	757
	173.5	Residence	NE	255
	173.6	Residence	SE	962
	173.8	Building or Other Structure	NW	846
	173.8	Building or Other Structure	NW	944
Segment 9 Proposed and Route 9K - Comparison portion for Toana Road Variations 1/1-A	38.2 - 46.8	MUA-12 West Devil	Crossed	Crossed
	46.5 - 46.8	Jarbidge Military Operations Area	Crossed	Crossed
Toana Road Variation 1	0.0 - 8.5	MUA-12 West Devil	Crossed	Crossed
	0.3	Toana Freight Wagon Road	Crossed	Crossed
	2.6	CAFO or Animal Pen	NE	872
	3.8 - 4.2	State Endowment Land	Crossed	Crossed
	7.9 - 8.5	Jarbidge Military Operations Area	Crossed	Crossed
Toana Road Variation 1-A	0.0 - 8.9	MUA-12 West Devil	Crossed	Crossed
	0.3	Toana Freight Wagon Road	Crossed	Crossed
	2.6	CAFO or Animal Pen	NE	113
	3.7 - 4.8	State Endowment Land	Crossed	Crossed
	8.6 - 8.9	Jarbidge Military Operations Area	Crossed	Crossed

Note:  
<sup>1/</sup> Portions of the disturbance areas may overlap; therefore, actual effects may be less than presented

Table D.19-1. Roads, Railroads, and Bridges Within 1 Mile of Project Centerline

Segment Number	Revised Proposed Routes, Other Routes, and Route Variations	Segment Length in Miles	Road Types in Miles				Total Road Miles	Railroad Miles	Number of Bridges in Inventory
			County-Maintained Highways or Numbered/Lettered Routes	State Highway	US Highway	Interstate			
8	Revised Proposed Route	129.7		8.3	7.2	4.5	20.1	7.6	5
	Proposed – Existing 500-kV Removal <sup>1/</sup>	1.1							
	Route 8G	146.9		18.0	4.3	3.0	25.3	2.8	5
	Route 8G – Existing 500-kV Removal	1.9							
	Route 8H	137.5		17.8	4.3	3.0	25.1	2.8	5
	Route 8H – Existing 138-kV Removal	25.7		4.8			4.8		2
	Route 8H – Existing 500-kV Removal	1.9							
9	Revised Proposed Route	165.3	1.8	19.1	2.0		22.9	2.1	8
	Proposed – Existing 138-kV Removal <sup>1/</sup>	25.7		4.8			4.8		2
	Segment 9 FEIS Proposed Route	162.2	1.8	23.8	2.0		27.5	2.1	3
	Route 9K	174.6	1.8	10.7	2.0		14.4	2.1	4
	Proposed – Comparison portion for Toana Road Variations 1/1-A	8.7							
	Toana Road Variation 1	8.5							
	Toana Road Variation 1-A	8.9							

Notes: Blank cells indicate zero miles or null value

<sup>1/</sup> Portions of the disturbance areas may overlap; therefore, actual effects may be less than presented



Table D.19-2. Airports and Heliports Within 1 Mile and 3 Miles of the Proposed Route

Segment Number	Revised Proposed Routes, Other Routes, and Route Variations	Segment Length (Miles)	Within 1 Mile of Route			Within 3 Miles of Route		
			Facility Type	Facility Name	Facility Use	Facility Type	Facility Name	Facility Use
8	Revised Proposed Route	129.7	Landing Strip	Unknown	Private	Airport	Gooding Municiple	Public
						Airport	Red Baron Airpark Ultralight	Private
						Landing Strip	Unknown	Private
						Ultralight	Oasis Strip	Private
	Proposed – Existing 500-kV Removal <sup>1/</sup>	1.1				Landing Strip	Unknown	Private
	Route 8G	146.9	Landing Strip	Unknown	Private	Airport	EZ Lope Ranch	Private
						Airport	Murphy	Public
						Airport	Owens Ranch Inc	Private
						Landing Strip	Unknown	Private
						Landing Strip	Unknown	Private
						Landing Strip	Unknown	Private
	Route 8G – Existing 500-kV Removal	1.9						
	Route 8H	137.5				Airport	Murphy	Public
						Landing Strip	Unknown	Private
						Landing Strip	Unknown	Private
						Landing Strip	Unknown	Private
	Route 8H – Existing 138-kV Removal	25.7						
	Route 8H – Existing 500-kV Removal	1.9						
9	Revised Proposed Route	165.3				Airport	Murphy	Public
						Landing Strip	Unknown	Private
						Landing Strip	Unknown	Private
						Landing Strip	Unknown	Private
						Landing Strip	Unknown	Private
	Proposed – Existing 138-kV Removal <sup>1/</sup>	25.7						
	Segment 9 FEIS Proposed Route	162.2	Airport	Murphy	Public	Airport	EZ Lope Ranch	Private
			Landing Strip	Unknown	Private	Landing Strip	Unknown	Private
			Landing Strip	Unknown	Private	Landing Strip	Unknown	Private
	Route 9K	174.6	Landing Strip	Unknown	Private	Airport	EZ Lope Ranch	Private
						Airport	Murphy	Public
						Airport	Owens Ranch Inc	Private
						Landing Strip	Unknown	Private
						Landing Strip	Unknown	Private
						Landing Strip	Unknown	Private
						Landing Strip	Unknown	Private
	Proposed – Comparison portion for Toana Road Variations 1/1-A	8.7						
	Toana Road Variation 1	8.5						
	Toana Road Variation 1-A	8.9						

Notes:  
<sup>1/</sup> Portions of the disturbance areas may overlap; therefore, actual effects may be less than presented